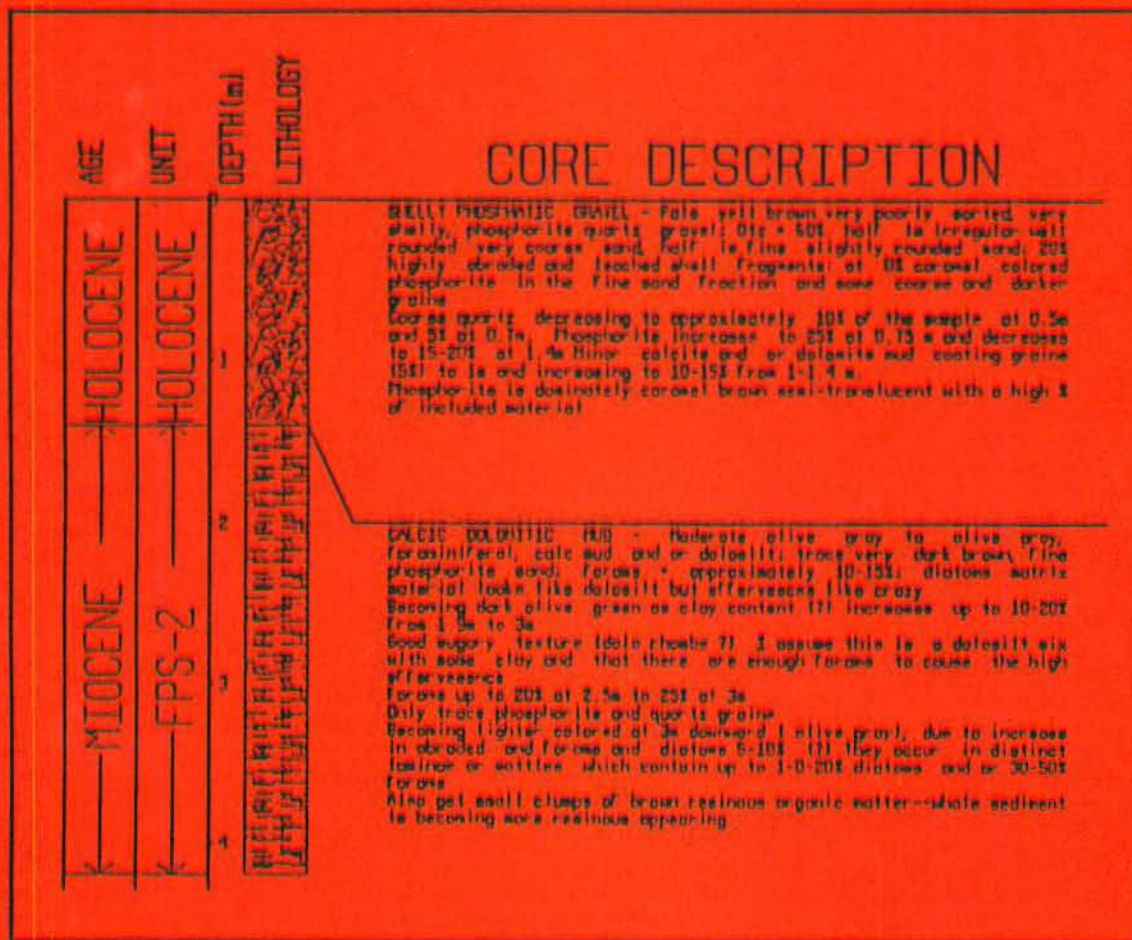


COMPILATION OF ANALYTICAL DATA FOR PHOSPHATE-RICH SEDIMENTS IN ONslow BAY, NORTH CAROLINA

by

Stanley R. Riggs, Dorothea v.d.P. Ames, Robert A. Wyrick, Katrina L. Lueck,

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OPEN-FILE REPORT 93-36
NORTH CAROLINA GEOLOGICAL SURVEY
DIVISION OF LAND RESOURCES
DEPARTMENT OF ENVIRONMENT, HEALTH
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Charles H. Gardner, State Geologist**

1993

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ONSLow BAY RESEARCH PROJECT

This compilation of analytical data for phosphate-rich sediments concerns the Upper Cenozoic geology of the Onslow Bay on the North Carolina continental margin as indicated in Figures 1 and 2. This study area is the Carolina phosphogenic province as defined by Riggs (1979, 1984) and represents the focus of an extended research program entitled *Genesis of the Upper Cenozoic Depositional Sequences of the Mid-Atlantic Continental Margin* with Stanley R. Riggs, Albert C. Hine, Scott W. Snyder, Stephen W. Snyder, and William J. Showers as co-principal investigators of various portions of the research. This extended research program began in 1979 and is still in progress, although at a slower pace than during the first decade. The data compiled in the present volume represents some of the analytical products of this research program on the Carolina phosphogenic province.

The included data are the results of research funded by the National Science Foundation (NSF) and the University of North Carolina Sea Grant College Program (UNCSGCP) of the National Oceanic and Atmospheric Administration (NOAA). Specific research grants during the period of 1979 through 1990 are listed below.

National Science Foundation Research Grants:

- OCE-7908949 to S. R. Riggs and A. C. Hine
Submarine phosphorites in Onslow Bay, North Carolina: evaluation of an exploration model.
- OCE-8110907 to S. R. Riggs and A. C. Hine
Submarine phosphorites in Onslow Bay, North Carolina: evaluation of an exploration model.
- OCE-8118164 to S. R. Riggs and A. C. Hine
Genesis of the phosphorite sediment sequence on the mid-Atlantic continental margin.
- OCE-8342777 to A. C. Hine, Stephen W. Snyder, and S. R. Riggs
Seismic stratigraphy of the North Carolina estuarine system.
- OCE-8400383 to S. R. Riggs, A. C. Hine, and Scott W. Snyder
Genesis of the phosphorite sediment sequence on the mid-Atlantic continental margin.
- OCE-8540985 to S. R. Riggs and A. C. Hine
Geologic and biologic impacts of Hurricane Diana on the outer continental shelf, Fryling Pan Shoals region, North Carolina.

¹ Work performed by authors while affiliated with the Department of Geology, East Carolina University, Greenville, North Carolina 27858

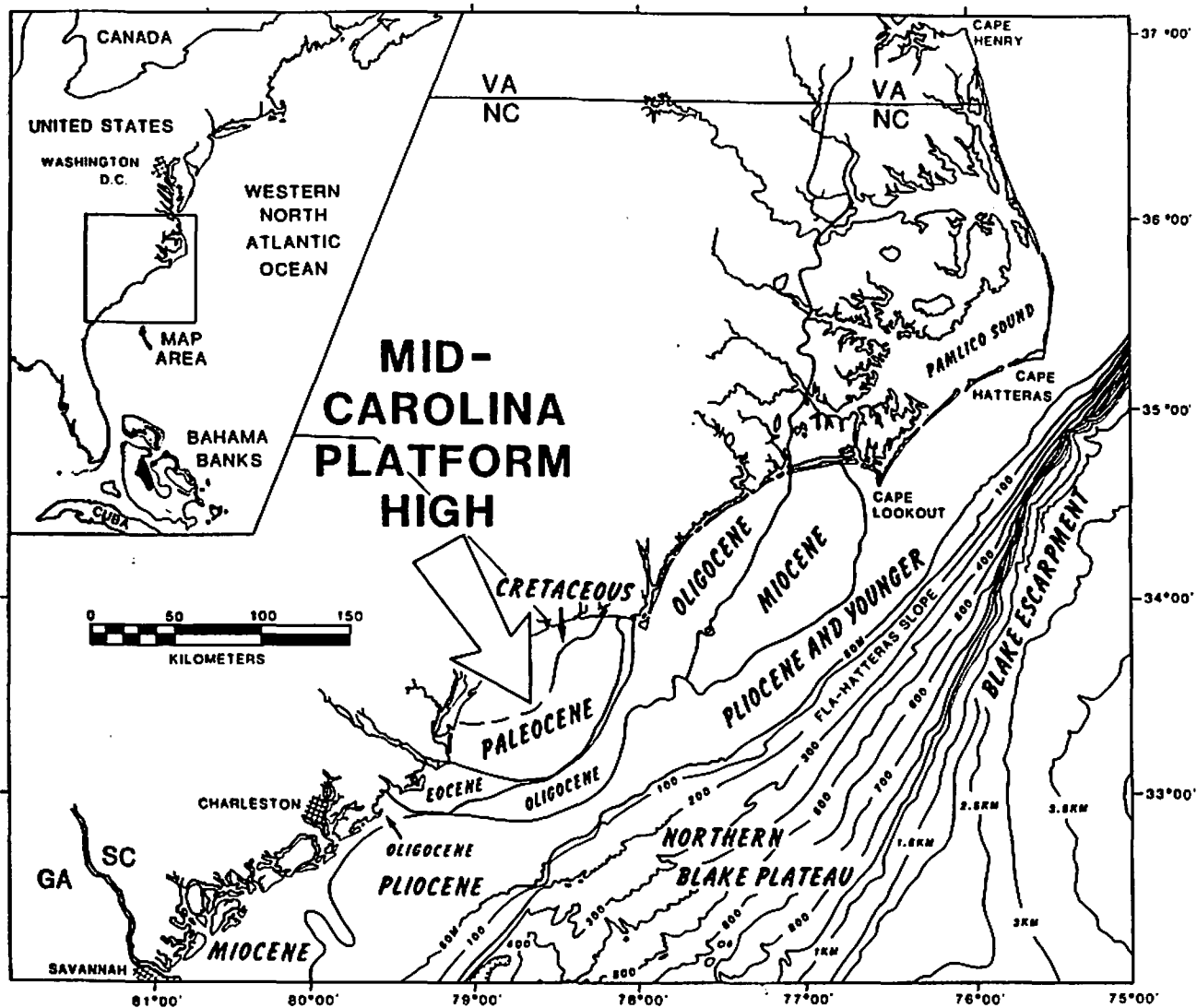


Figure 1. Distribution of outcropping Cenozoic and Cretaceous sequences within the continental shelf of the Carolinas and Georgia as mapped from chronostratigraphic correlations via seismic-reflection studies (modified from Stephen W. Snyder, 1982). Note that the Miocene sequences only crop out on the sea floor across the limbs of the Mid-Carolina Platform High and are partially missing from the nose of this first-order paleotopographic feature; the remaining Miocene sediment has been buried by Pliocene and Quaternary shelf-margin sediments.

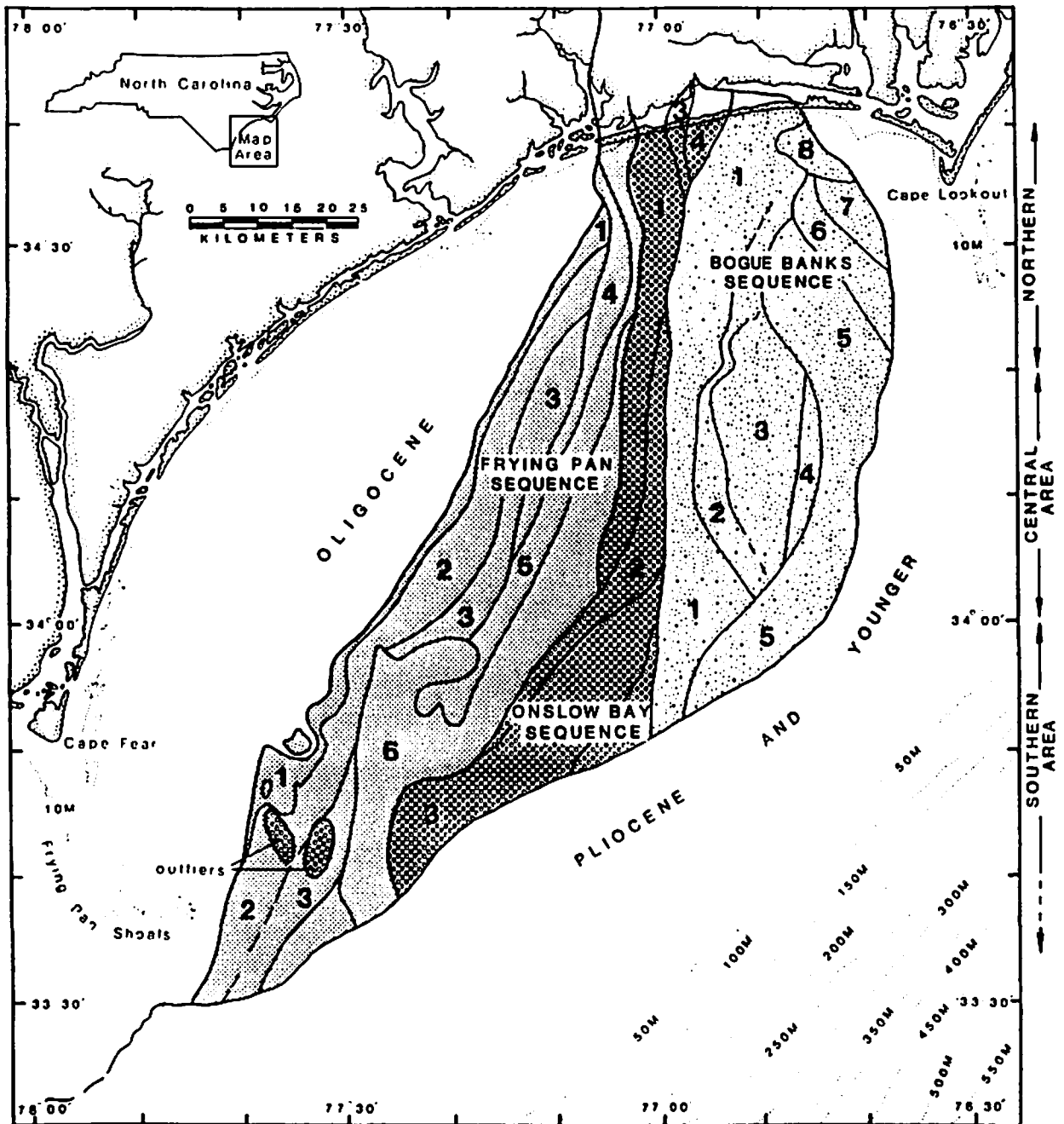


Figure 2. Outcrop distribution map of Onslow Bay, North Carolina showing 16 fourth-order seismic sequences of the Miocene Pungo River Formation. Also, shown on the map are the three third-order seismic, biostratigraphic, and depositional sections referred to as the Frying Pan (FPS), Onslow Bay (OBS), and Bogue Banks Sections (BBS) of mid-Burdigalian, Langhian, and Serravallian ages, respectively. Modified from Stephen W. Snyder (1982) by Mallette (1986).

OCE-8609161 to S. R. Riggs, A. C. Hine, and Scott W. Snyder
Genesis of the phosphorite sediment sequence on the mid-Atlantic continental margin.

OCE-8709429 to S. R. Riggs
Isotopic composition of the Miocene phosphorite sediment on the Carolina continental margin: a detailed record of glacio-eustatic sea-level cyclicality.

OCE-8710311 to W. J. Showers
Isotopic composition of the Miocene phosphorite sediment on the Carolina continental margin: a detailed record of glacio-eustatic sea-level cyclicality.

University of North Carolina Sea Grant College Program of the National Oceanographic and Atmospheric Administration Research Grants:

NA83AA-D-SG012 to Scott W. Snyder and S. R. Riggs
Micropaleontological characterization and correlation of the continental shelf phosphorites, Onslow Bay, North Carolina.

NA85AA-D-SG022 to 1) Scott W. Snyder and S. R. Riggs
Relationship of microfauna to post-depositional changes in cyclical Neogene sedimentary sequences of Onslow Bay.

NA85AA-D-SG023 to 2) S. R. Riggs, A. C. Hine, and Scott W. Snyder
Carbonate hardgrounds in Onslow Bay, North Carolina.

Preparation and publication of this specific document is the result of a grant from the U.S. Department of Interior, Minerals Management Service to S. R. Riggs with the assistance of the North Carolina Geological Survey.

Publications resulting directly from this extended research project include 54 peer-reviewed manuscripts appearing in professional journals, monographs, and as chapters in technical books, and 88 abstracts appearing in abstract volumes. Several synthesis papers are being prepared for publication during the next few years. In fact, this long-term research project continues, but with a slightly different focus that considers the following:

- Isotope stratigraphy (including strontium age dating of various sediment components) within the Upper Cenozoic
- Isotope and trace element geochemistry (including oxygen, carbon, and neodymium isotopes) of the phosphate sediment component
- Quaternary history and role of hardbottoms in biological productivity on the continental shelf.

The results from this extended research program have been published in many different places and formats. The references and abstracts for all project publications have been summarized and published in the following volume:

Riggs, S. R., and Ames, D. v. d. P., 1992, Upper Cenozoic geology of the Onslow Bay and Aurora Embayments, North Carolina: compilation of published abstracts from the literature: North Carolina Geological Survey Information Circular 28, 209 p.

The seismic database is being published separately by the North Carolina Geological Survey as the *Miocene Seismic Library for the North Carolina Continental Shelf south of Cape Lookout* by Stephen W. Snyder (in preparation as a North Carolina Geological Survey open-file report) and a color map with cross sections titled *Miocene Geology of the Continental Shelf*,

Onslow Bay, North Carolina by Stephen W. Snyder, A. C. Hine, S. R. Riggs, and Scott W. Snyder (North Carolina Geological Survey Map 3, 1993). The biostratigraphic database was published in Scott W. Snyder (1988). The phosphate resource database for Onslow Bay has been published in numerous formats and upgraded over the years as increased information has become available and include Riggs and others (1982, 1985), Development Planning and Research Associates (1987), Riggs (1989), and Powers and others (1990).

Personnel associated with this multidisciplinary, Onslow Bay project include many senior researchers from numerous universities and government agencies, as well as many graduate students. Additional analytical data are available from the 25 M.S. theses and 2 Ph.D. dissertations completed as part of this project. Abstracts for each of these 25 M.S. theses are included in Riggs and Ames (1992). These unpublished theses contain additional data on the various phosphate-bearing stratigraphic units including the Miocene Pungo River Formation, Pleistocene carbonates, and the surficial Holocene sands. The data include: 1) various types of remotely sensed stratigraphic and structural surveys; 2) biostratigraphic age evaluations; 3) many types of elemental and isotopic analyses; 3) mineralogic and petrographic evaluations of the sediments; 4) textural measurements on specific sediment components; and 5) evaluations of stratigraphic facies and depositional environments. The theses are from the five institutions listed below and are available from each institution through the appropriate interlibrary loan programs.

East Carolina University, Greenville, North Carolina 27858.
North Carolina State University, Raleigh, North Carolina 27650.
University of South Florida, St. Petersburg, Florida 33701.
University of North Carolina-Chapel Hill, North Carolina 27514.
Duke University, Durham, North Carolina 27706.

Two Ph.D. dissertations are in their final stages by Ronald A. Crowson at North Carolina State University and Stephen W. Snyder at the University of South Florida. These dissertations concern the isotope geochemistry of the Onslow Bay phosphorites and the seismic stratigraphy of the Onslow Bay Tertiary section, respectively.

PURPOSE AND SCOPE OF PRESENT PUBLICATION

The purpose of the present document is to publish the general databases produced by various analytical aspects of the phosphate-rich sediments resulting from the Onslow Bay research project. This report does not include any remotely sensed data (high-resolution seismic, side-scan sonar, and bottom video and photographic surveys), water-column and pore-water chemistry, paleontological analyses, or any of the specialized databases that are included in the unpublished theses and dissertations done as part of this project. As previously stated, all of these data are available through other publications.

The samples utilized to develop the analytical databases included in this publication were obtained during the 11 research cruises outlined in Table 1. Table 2 summarizes the types and numbers of shipboard samples that were obtained during the research cruises. These samples form the basis for the analytical data presented in this report which includes the following:

- Sample locations
- Stratigraphic units occurring in vibracores
- Chemical data for vibracore and surface bulk-sediment samples
- Chemical data for surface bulk-sediment samples from the archives
- Organic data for bulk-sediment samples
- Textural data for SHIPEK surface samples
- Metallurgical analysis of phosphate from vibracore samples
- Chemical analysis of phosphate concentrates from metallurgical tests
- Chemical analysis of hand-picked concentrates of phosphate grain types
- Geologic logs for Miocene-bearing vibracores

Table 1. Research cruises and data obtained for the Onslow Bay continental shelf research project.

CRUISE	SHIP	DATA *	DATES	DAYS
I	R/V Eastward	C, SS, HRS	May, 1980	19
II.	R/V Endeavor	VC, SS, HRS	Oct., 1980	10
III.	R/V Columbus Iselin	VC, SS, HRS	May, 1981	18
IV.	R/V Cape Hatteras	VC, SS, HRS	May, 1982	19
V.	R/V Cape Hatteras	VC, SS, HRS, SSS	May, 1983	17
VI.	R/V Nitro	Estuarine HRS	June, 1983	20
VII.	R/V Cape Hatteras	BC, SS, HRS, SSS	Oct., 1983	5
VIII.	R/V Cape Hatteras	BC, SS, HRS, SSS, V	Dec., 1984	4
IX.	R/V Peirce	BC, SS, HRS, SSS	Dec., 1985	4
X.	R/V Cape Hatteras	BC, SS, HRS, WC	June, 1989	5
XI.	R/V Cape Hatteras	BC, SS, HRS, SSS, WC	May, 1991	6

* VC = vibracores; SS = surface samples; BC = boxcores;

HRS = high-resolution seismic profiles (Uniboom™, sparker, 1 in³ airgun); SSS = side-scan sonar profiles; V = bottom video profiles; WC = water chemistry

Table 2. Shipboard samples obtained on 11 research cruises for the Onslow Bay continental shelf research project. These samples form the basis for the analytical data included in this report.

SAMPLE TYPE	AVERAGE PENETRATION	QUANTITY
Vibracores	< 9 meters	141
Stratigraphic section	meters	923
SHIPEK surface samples	centimeters	313
Rock-dredge hauls	< .25 meters	30
Boxcores	< .5 meters	34
Gravity cores	< 1 meter	2

SAMPLE LOCATIONS

This data file presents pertinent location information for samples obtained from shipboard in Onslow Bay, North Carolina during the Onslow Bay project. The samples were obtained as vibracores, box cores, and gravity cores, as well as surface samples obtained with SHIPEK and rock-dredge samplers. Figure 3 presents the location of vibracores that penetrated the Pungo River Formation. The key for the types of shipboard samples and included data is as follows.

Column 1: SAMPLE

OB-11	Onslow Bay vibracore number 11
LB-3	Long Bay vibracore number 3
OBS-17	Onslow Bay SHIPEK sample number 17
OBS-175 (153)	active sample number (old sample number)
RBS-12	Raleigh Bay SHIPEK sample number 12
OBD-6	Onslow Bay rock dredge sample number 6. The first entry represents the time and location of rock dredge deployment; the second entry is the time and location of rock dredge retrieval.
OB-BC-15	Onslow Bay box core number 15
OBG-3	Onslow Bay gravity core number 3

Column 2: LATTITUDE

Latitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 3: LONGITUDE

Longitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 4: STATION

The ship's station number, where available

Column 5: CRUISE

The ship and cruise numbers are as follows:

E-3-80	NSF ship R/V Eastward, cruise 3 of 1980
EN-057	NSF ship R/V Endeavor, cruise 57 of 1980
I-8105	NSF ship R/V Columbus Iselin, cruise 5 of 1981
CH-13-82	NSF ship R/V Cape Hatteras, cruise 13 of 1982; similar number system is used for all 6 of the Cape Hatteras cruises
RV Peirce	NOAA ship R/V Peirce cruise of 1985

Column 6: LORAN1

First Loran C reading at sample site

Column 7: LORAN2

Second Loran C reading at sample site

Column 8: DATE

Date sample obtained

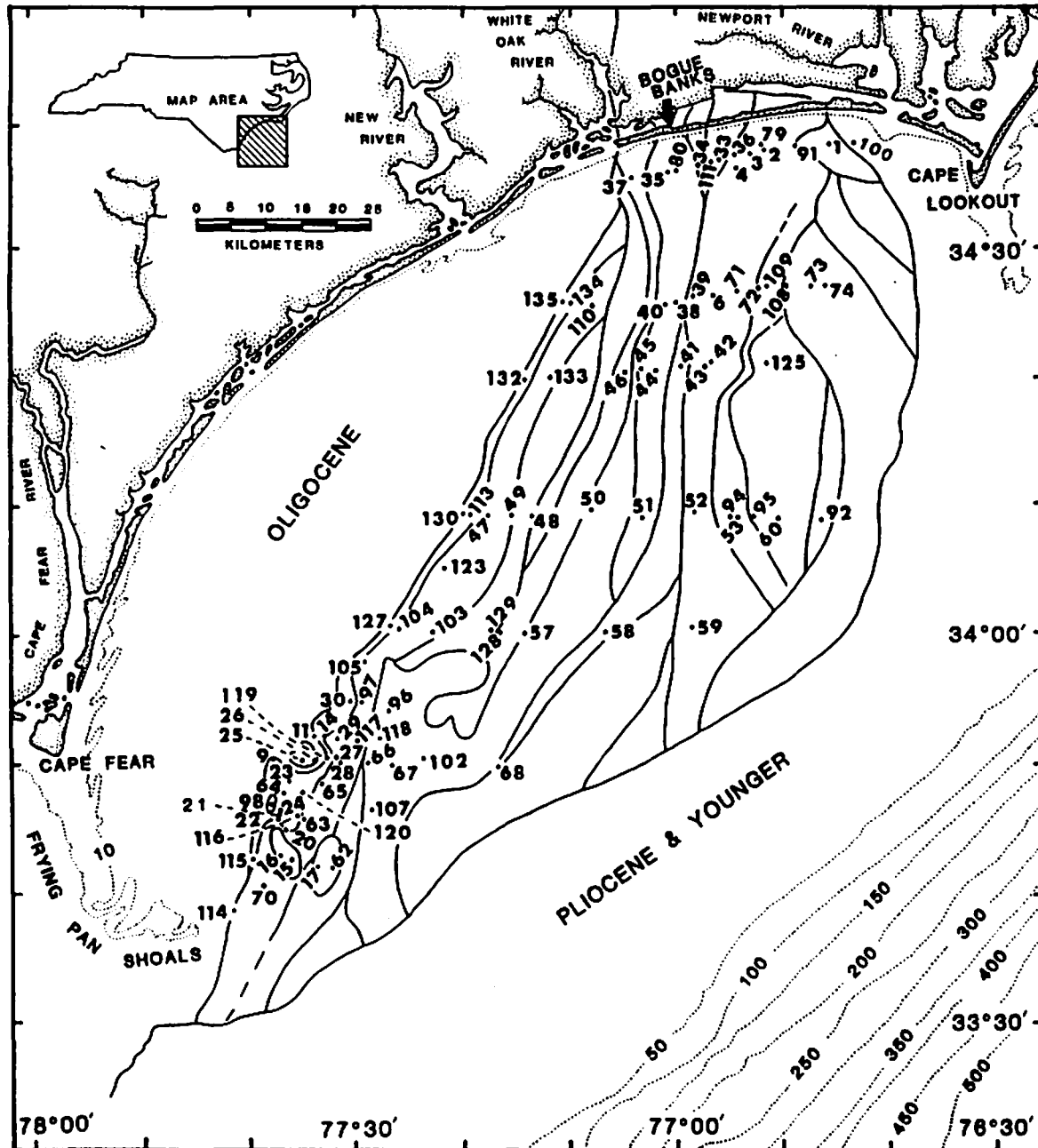


Figure 3. Location of 95 vibracores that penetrated the sediments of the Miocene Pungo River Formation in Onslow Bay, North Carolina (from Scott W. Snyder, 1988).

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
08-1	34.640	76.768	38059	E-3-80	27131.6	39637.3	12-May-80
08-2	34.633	76.865	38060	E-3-80	27147.7	39607.4	12-May-80
08-2B	34.467	76.865	38060	E-3-80	27147.7	39607.4	12-May-80
08-3	34.628	76.890	38062	E-3-80	27152.3	39599.2	13-May-80
08-4	34.608	76.913	38063	E-3-80	27154.2	39581.3	13-May-80
08-5	34.636	76.708	38064	E-3-80	27118.9	39651.1	14-May-80
08-6	34.443	76.943	38068	E-3-80	27148.4	39481.0	15-May-80
08-6B	34.443	76.943	38068	E-3-80	27148.4	39481.1	14-May-80
08-7	33.855	77.611	38116	E-3-80	27222.0	39551.7	19-May-80
08-8	33.853	77.656	38117	E-3-80	27222.1	39539.4	19-May-80
08-9	33.851	77.628	38118	E-3-80	27222.2	39546.8	19-May-80
08-9	33.855	77.641	38119	E-3-80	27224.8	39543.7	19-May-80
08-10	33.868	77.578	38120	E-3-80	27215.0	39561.9	19-May-80
08-11	33.866	77.590	38121	E-3-80	27217.2	39558.6	19-May-80
08-12	33.861	77.601	38122	E-3-80	27219.0	39555.3	19-May-80
08-13	33.861	77.565	38123	E-3-80	27209.3	39065.5	19-May-80
08-14	33.713	77.603	38124	E-3-80	27208.0	39535.1	19-May-80
08-15	33.685	77.623	38127	E-3-80	27211.5	39530.9	20-May-80
08-16	33.706	77.570	38128	E-3-80	27201.9	39542.8	20-May-80
08-17	33.728	77.671	38129	E-3-80	27220.1	39519.7	20-May-80
08-18	33.728	77.608	38130	E-3-80	27223.1	39515.4	20-May-80
08-19	33.753	77.613	38131	E-3-80	27212.5	39538.1	20-May-80
08-20	33.771	77.626	38132	E-3-80	27216.4	39536.4	20-May-80
08-21	33.763	77.625	38147	E-3-80	27215.0	39536.3	21-May-80
08-22	33.815	77.611	38148	E-3-80	27216.3	39547.0	21-May-80
08-23	33.780	77.621	38149	E-3-80	27215.9	39539.0	21-May-80
08-24	33.846	77.585	38150	E-3-80	27214.5	39557.2	21-May-80
08-25	33.843	77.560	38151	E-3-80	27209.9	39563.5	21-May-80
08-26	33.841	77.533	38152	E-3-80	27205.0	39570.8	21-May-80
08-27	33.831	77.528	38153	E-3-80	27204.0	39065.6	22-May-80
08-28	33.873	77.535	38154	E-3-80	27207.9	39573.6	21-May-80
08-29	33.873	77.535	38155	E-3-80	27207.9	39573.6	21-May-80
08-29B	33.873	77.535	38155	E-3-80	27211.1	39579.1	22-May-80
08-30	33.916	77.503	38156	E-3-80	27211.1	39579.1	22-May-80
08-31	33.913	77.533	38157	E-3-80	27206.2	39085.5	22-May-80
08-32			none	E-3-80	none	39085.5	22-May-80
08-33	34.618	76.936	38170	E-3-80	27159.4	39581.7	25-May-80
08-34	34.610	76.970	38171	E-3-80	27165.0	39567.6	25-May-80
08-35	34.608	77.011	38172	E-3-80	27172.8	39553.3	25-May-80
08-36	34.626	76.915	38173	E-3-80	27156.0	39591.0	25-May-80
08-37	34.593	77.078	38174	E-3-80	27183.1	39530.6	26-May-80
08-38	34.436	77.008	38175	E-3-80	27157.5	39462.5	26-May-80
08-39	34.440	76.975	38176	E-3-80	27159.4	39471.1	26-May-80
08-40	34.433	77.016	38195	E-3-80	27159.9	39455.1	27-May-80

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
08-41	34.358	76.996	38196	E-3-80	27150.1	29419.4	27-May-80
08-42	34.355	76.953	38197	E-3-80	27142.7	39434.1	27-May-80
08-43	34.353	76.958	38198	E-3-80	27143.6	39431.3	27-May-80
08-44	34.346	77.031	38199	E-3-80	27156.4	39407.4	27-May-80
08-45	34.346	77.055	38200	E-3-80	27160.2	39400.8	27-May-80
08-45B	34.346	77.055	38201	E-3-80	27160.2	39400.8	27-May-80
08-46	34.341	77.081	38202	E-3-80	27164.7	39389.6	27-May-80
08-47	34.075	77.295	38203	E-3-80	27188.9	39239.9	28-May-80
08-48	34.156	77.220	38204	E-3-80	27176.0	39262.9	28-May-80
08-49	34.161	77.258	38205	E-3-80	27182.0	39250.2	28-May-80
08-50	34.158	77.141	38206	E-3-80	27161.9	39288.2	28-May-80
08-51	34.153	77.055	38207	E-3-80	27147.6	39313.0	28-May-80
08-52	34.158	76.975	38208	E-3-80	27133.0	39341.8	28-May-80
08-53	34.160	76.915	38209	E-3-80	27121.6	39358.2	28-May-80
08-54	34.015	77.463	38210	E-3-80	27206.4	39128.8	29-May-80
08-55	34.010	77.491	38211	E-3-80	27210.6	39120.4	29-May-80
08-56	34.013	77.395	38212	E-3-80	27194.9	39151.2	29-May-80
08-57	34.000	77.230	38213	E-3-80	27168.1	39195.2	29-May-80
08-58	34.000	77.123	38214	E-3-80	27147.5	39231.3	29-May-80
08-59	34.010	76.988	38215	E-3-80	27123.5	39277.8	29-May-80
08-60	34.163	76.846	38216	E-3-80	27110.4	39377.7	29-May-80
08-61	33.910	77.563		EN=057	27110.4	39377.7	26-Oct-80
08-62	33.703	77.533		EN=057	27195.3	39048.7	27-Oct-80
08-63	33.763	77.501		EN=057	27208.2	39044.6	27-Oct-80
08-64	33.805	77.630		EN=057	27216.9	39040.4	27-Oct-80
08-65	33.813	77.558		EN=057	27208.0	39056.0	27-Oct-80
08-66	33.836	77.498		EN=057	27197.7	39078.3	28-Oct-80
08-67	33.835	77.448		EN=057	27190.7	39089.2	28-Oct-80
08-68	33.833	77.285		EN=057	27163.2	39136.3	28-Oct-80
08-69	33.650	77.610		EN=057	27204.4	39030.9	29-Oct-80
08-70	33.681	77.645		EN=057	27212.5	39026.0	29-Oct-80
08-71	34.448	77.913		EN=057	27142.1	39494.0	31-Oct-80
08-72	34.453	76.876		EN=057	27136.1	39506.9	31-Oct-80
08-73	34.455	77.806		EN=057	27123.7	39527.5	31-Oct-80
08-74	34.460	76.783		EN=057	27119.4	39533.7	31-Oct-80
08-75	34.436	76.970		EN=057	27151.9	39471.9	31-Oct-80
08-76	33.851	77.630		EN=057	27222.5	39042.8	01-Nov-80
08-77	33.848	77.593		EN=057	27216.1	39052.0	01-Nov-80
08-78	33.723	77.651		EN=057	27216.3	39027.2	02-Nov-80
08-79	34.635	76.868		EN=057	27147.8	39608.1	03-Nov-80
08-80	34.605	77.005		EN=057	27171.1	39556.8	03-Nov-80
08-81	34.591	77.095		EN=057	27186.8	39525.9	03-Nov-80
08-82	34.595	77.050		EN=057	27179.3	39539.1	03-Nov-80

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
08-83	34.603	77.031		EN-057	27176.5	39548.1	03-Nov-80
08-84	34.653	76.818		I-8105	27140.7	39632.6	04-May-81
08-85	34.655	77.793		I-8105	27106.1	39639.1	04-May-81
08-86	34.655	76.836		I-8105	27144.0	39628.4	05-May-81
08-87	34.635	77.060		I-8105	27183.6	39560.6	05-May-81
08-88	34.676	76.790		I-8105	27137.1	39652.8	09-May-81
08-89	34.610	76.873		I-8105	27147.6	39593.0	12-May-81
08-90	34.641	76.723		I-8105	27121.9	39650.0	12-May-81
08-91	34.636	76.823		I-8105	27140.3	39621.2	12-May-81
08-92	34.156	76.708		I-8105	27099.3	39395.6	13-May-81
08-93A	34.160	76.733		I-8105	27089.7	39413.3	13-May-81
08-93B	34.160	76.733		I-8105	27089.7	39413.3	13-May-81
08-94	34.163	76.923		I-8105	27123.8	39356.1	13-May-81
08-95	34.160	76.870		I-8105	27117.1	39366.6	13-May-81
08-96	33.901	77.455		I-8105	27196.9	39100.7	14-May-81
08-97	33.915	77.491		I-8105	27204.3	39092.4	14-May-81
08-98	33.783	77.635		I-8105	27210.1	57536.0	14-May-81
08-99	34.011	76.836		I-8105	27098.0	39325.9	15-May-81
08-100	34.625	76.713		CH-13-82	27122.6	37647.1	22-May-82
08-101	34.433	77.051		CH-13-82	27166.4	39445.4	23-May-82
08-102	33.830	77.401		CH-13-82	27183.0	57604.5	25-May-82
08-103	34.005	77.381		CH-13-82	27191.5	57632.0	26-May-82
08-104	34.006	77.440		CH-13-82	27201.8	57617.6	26-May-82
08-105	33.965	77.491		CH-13-82	27207.3	57598.6	26-May-82
08-106	33.848	77.626		CH-13-82	27221.8	57548.3	27-May-82
08-107	33.773	77.480		CH-13-82	27192.0	57576.1	27-May-82
08-108	34.455	77.148		CH-13-82	27130.4	57832.4	28-May-82
08-109	34.455	77.185		CH-13-82	27133.5	57827.9	28-May-82
08-110	34.428	77.131		CH-13-82	27179.7	57756.6	28-May-82
08-111	34.615	76.941		CH-13-82	27159.7	57833.7	29-May-82
08-112	34.433	77.093		CH-13-82	27173.0	57767.2	29-May-82
08-113A	34.163	77.325		CH-13-82	27193.5	57668.0	29-May-82
08-113B	34.163	77.325		CH-13-82	27193.5	57668.0	29-May-82
08-114	33.645	77.696		CH-13-82	27218.4	57503.3	31-May-82
08-115	33.711	77.660		CH-13-82	27216.6	57521.0	31-May-82
08-116	33.768	77.591		CH-13-82	27209.4	57545.8	31-May-82
08-117	33.865	77.498		CH-13-82	27201.1	57582.1	02-Jun-82
08-118	33.870	77.468		CH-13-82	27196.3	57590.3	02-Jun-82
08-119	33.843	77.551		CH-13-82	27208.3	57565.7	02-Jun-82
08-120	33.795	77.588		CH-13-82	27211.0	57550.2	02-Jun-82
08-121	33.968	77.526		CH-13-82	27213.5	57588.5	04-Jun-82
08-122	34.086	77.401		CH-13-82	27200.9	57637.0	04-Jun-82
08-123	34.340	77.150		CH-13-82	27195.7	57645.6	04-Jun-82

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OB-124	34.090	77.370		CH-13-82	27176.3	57737.3	05-Jun-82
OB-125	34.360	76.870		CH-13-82	27127.5	57811.2	05-Jun-82
OB-126	33.976	77.500		CH-11-83	27209.8	57598.4	12-May-83
OB-127	34.006	77.446		CH-11-83	27203.3	57616.3	12-May-83
OB-128	33.996	77.280		CH-11-83	39181.8	27174.0	13-May-83
OB-129	34.005	77.283		CH-11-83	39183.6	27175.4	13-May-83
OB-130	34.158	77.325		CH-11-83	39228.3	27194.0	13-May-83
OB-131	34.011	77.026		CH-11-83	57722.6	27131.3	14-May-83
OB-132	34.336	77.221		CH-11-83	57720.6	27189.3	15-MAY-83
OB-133	34.338	77.198		CH-11-83	39354.7	27185.4	15-May-83
OB-134	34.423	77.185		CH-11-83	27189.7	57743.1	17-MAY-83
OB-135	34.425	77.188		CH-11-83	27190.4	39484.5	17-May-83
LB-1	33.488	77.761		CH-13-82	27217.3	57467.2	03-Jun-82
LB-2	33.478	77.740		CH-13-82	27213.1	57471.6	03-Jun-82
LB-3	33.473	77.728		CH-13-82	27210.7	57474.1	03-Jun-82
LB-4	33.455	77.883		CH-11-83	27234.6	57432.1	11-May-83
LB-5	33.503	77.948		CH-11-83	27248.4	57421.3	11-May-83
LB-6	33.305	77.710		CH-11-83	57458.2	27196.4	11-May-83
OBS-1	34.436	76.936	38067	E-3-80	27148.4	39481.0	15-May-80
OBS-2	33.754	77.519	38078	E-3-80	27199.4	39055.9	17-May-80
OBS-3	33.756	77.535	38079	E-3-80	27200.9	39053.8	12-May-80
OBS-4	33.739	77.585	38080	E-3-80	27209.1	39033.5	17-May-80
OBS-5	33.737	77.570	38081	E-3-80	27203.5	39046.4	18-May-80
OBS-6	33.777	77.576	38083	E-3-80	27208.8	39047.3	18-May-80
OBS-7	33.854	77.620	38084	E-3-80	27220.8	39043.7	18-May-80
OBS-8	33.856	77.626	38085	E-3-80	27222.8	39040.6	18-May-80
OBS-9	33.839	77.654	38086	E-3-80	27226.8	57539.4	18-May-80
OBS-10	33.729	77.685	38087	E-3-80	27222.4	57515.8	18-May-80
OBS-11	33.727	77.672	38088	E-3-80	27220.0	57520.0	18-May-80
OBS-12	33.724	77.637	38089	E-3-80	27215.1	57526.1	18-May-80
OBS-13	33.721	77.626	38089	E-3-80	27212.1	57530.0	18-May-80
OBS-14	33.708	77.603	38091	E-3-80	27207.7	57535.2	18-May-80
OBS-15	33.705	77.580	38092	E-3-80	27203.9	57540.6	18-May-80
OBS-16	33.727	77.589	38093	E-3-80	27208.2	57538.5	18-May-80
OBS-17	33.751	77.608	38094	E-3-80	27212.7	57537.6	18-May-80
OBS-18	33.772	77.627	38095	E-3-80	27216.0	57536.4	18-May-80
OBS-19	33.778	77.633	38096	E-3-80	27218.8	57534.8	18-May-80
OBS-20	33.800	77.650	38097	E-3-80	27222.1	57534.1	18-May-80
OBS-21	33.809	77.658	38098	E-3-80	27225.8	57532.8	18-May-80
OBS-22	33.831	77.676	38099	E-3-80	27229.1	57531.8	18-May-80
OBS-23	33.851	77.685	38100	E-3-80	27232.7	57530.7	18-May-80
OBS-24	33.856	77.701	38101	E-3-80	27235.2	57529.0	18-May-80
OBS-25	33.870	77.677	38102	E-3-80	27231.5	57536.1	18-May-80

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-26	33.859	77.653	38103	E-3-80	27227.6	57542.1	18-May-80
OBS-27	33.858	77.588	38104	E-3-80	27218.0	57556.4	18-May-80
OBS-28	33.870	77.601	38105	E-3-80	27219.0	57555.6	18-May-80
OBS-29	33.871	77.574	38106	E-3-80	27215.2	57561.8	18-May-80
OBS-30	33.988	77.555	38107	E-3-80	27211.4	57566.6	18-May-80
OBS-31	33.859	77.537	38108	E-3-80	27209.5	57569.8	18-May-80
OBS-32	33.883	77.580	38109	E-3-80	27217.4	57563.5	19-May-80
OBS-33	33.902	77.604	38110	E-3-80	27222.1	57559.4	19-May-80
OBS-34	33.924	77.625	38111	E-3-80	27227.0	57557.5	19-May-80
OBS-35	33.935	77.636	38112	E-3-80	27231.5	57555.2	19-May-80
OBS-36	33.977	77.682	38113	E-3-80	27241.3	57548.5	19-May-80
OBS-37	33.886	77.671	38114	E-3-80	27231.9	57542.3	19-May-80
OBS-38	33.853	77.607	38115	E-3-80	27219.9	57551.8	19-May-80
OBS-39	33.736	77.726	38125	E-3-80	27230.3	57507.3	20-May-80
OBS-40	33.908	77.724	38126	E-3-80	27242.6	57530.5	20-May-80
OBS-41	33.770	77.727	38133	E-3-80	27232.4	57510.0	20-May-80
OBS-42	33.707	77.677	38134	E-3-80	27219.9	57516.3	20-May-80
OBS-43	33.681	77.654	38135	E-3-80	27214.5	57518.1	21-May-80
OBS-44	33.659	77.635	38136	E-3-80	27210.5	57518.8	21-May-80
OBS-45	33.633	77.605	38137	E-3-80	27203.3	57524.4	21-May-80
OBS-46	33.621	77.581	38137	E-3-80	27197.7	57528.3	21-May-80
OBS-47	33.606	77.553	38138	E-3-80	27192.0	57536.8	21-May-80
OBS-48	33.555	77.521	38139	E-3-80	27185.9	57546.4	21-May-80
OBS-49	33.620	77.470	38140	E-3-80	27177.4	57559.4	21-May-80
OBS-50	33.652	77.456	38141	E-3-80	27179.8	57567.4	21-May-80
OBS-51	33.704	77.439	38142	E-3-80	27183.2	57569.6	21-May-80
OBS-52	33.728	77.470	38143	E-3-80	27187.2	57572.0	21-May-80
OBS-53	33.770	77.470	38144	E-3-80	27189.1	57577.9	21-May-80
OBS-54	33.757	77.509	38145	E-3-80	27196.7	57566.3	21-May-80
OBS-55	34.451	76.673	38159	E-3-80	27097.9	39564.0	24-May-80
OBS-56	34.451	76.708	38160	E-3-80	27106.3	39551.9	24-May-80
OBS-57	34.452	76.733	38161	E-3-80	27114.2	39541.2	24-May-80
OBS-58	34.452	76.753	38162	E-3-80	27121.7	39532.9	24-May-80
OBS-59	34.454	76.784	38163	E-3-80	27128.7	39520.1	24-May-80
OBS-60	34.454	76.875	38164	E-3-80	27136.7	39507.6	25-May-80
OBS-61	34.451	76.920	38165	E-3-80	27143.3	39493.3	25-May-80
OBS-62	34.437	76.955	38166	E-3-80	27150.4	39478.6	25-May-80
OBS-63	34.432	76.987	38167	E-3-80	27156.5	39462.9	25-May-80
OBS-64	34.426	77.036	38168	E-3-80	27164.1	39444.3	25-May-80
OBS-65	34.409	77.080	38169	E-3-80	27170.0	39426.9	25-May-80
OBS-66	34.409	76.908	38177	E-3-80	27139.8	39475.5	26-May-80
OBS-67	34.379	76.905	38178	E-3-80	27136.6	39460.7	26-May-80
OBS-68	34.338	76.901	38179	E-3-80	27132.8	39444.5	26-May-80

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-69	34.320	76.886	30180	E-3-80	27129.0	39432.5	26-May-80
OBS-70	34.268	76.882	30181	E-3-80	27125.8	39419.3	26-May-80
OBS-71	34.250	76.878	30182	E-3-80	27121.7	39406.3	26-May-80
OBS-72	34.228	76.875	30183	E-3-80	27120.1	39400.2	27-May-80
OBS-73	34.236	76.905	30184	E-3-80	27128.2	39394.9	27-May-80
OBS-74	34.260	76.936	30185	E-3-80	27135.1	39393.2	27-May-80
OBS-75	34.269	76.979	30186	E-3-80	27142.8	39389.7	27-May-80
OBS-76	34.289	77.010	30187	E-3-80	27150.0	39387.2	27-May-80
OBS-77	34.308	77.050	30188	E-3-80	27158.1	39385.9	27-May-80
OBS-78	34.329	77.080	30189	E-3-80	27165.3	39384.0	27-May-80
OBS-79	34.336	77.106	30190	E-3-80	27170.4	39382.5	27-May-80
OBS-80	34.335	77.060	30191	E-3-80	27162.8	39395.7	27-May-80
OBS-81	34.335	77.016	30192	E-3-80	27155.4	39405.5	27-May-80
OBS-82	34.334	76.985	30193	E-3-80	27147.6	39415.4	27-May-80
OBS-83	34.331	76.951	30193	E-3-80	27140.1	39425.8	27-May-80
OBS-84	34.421	76.671	30193	I-8105	27095.6	39548.7	10-May-81
OBS-85	34.383	76.624		I-8105	27085.1	39546.6	10-May-81
OBS-86	34.354	76.670		I-8105	27091.1	39519.7	10-May-81
OBS-87	34.302	76.707		I-8105	27095.5	39481.7	10-May-81
OBS-88	34.094	77.670		I-8105	27084.2	39473.8	10-May-81
OBS-89	34.209	76.624		I-8105	27073.1	39469.3	10-May-81
OBS-90	34.164	76.670		I-8105	27078.6	39498.8	10-May-81
OBS-91	34.125	76.259		I-8105	27064.3	39404.9	10-May-81
OBS-92	34.065	76.671		I-8105	27072.4	39399.8	11-May-81
OBS-93	34.063	76.723		I-8105	27081.6	39383.1	11-May-81
OBS-94	34.063	76.777		I-8105	27091.7	39365.8	11-May-81
OBS-95	34.065	76.831		I-8105	27101.8	39349.0	11-May-81
OBS-96	34.063	76.878		I-8105	27109.6	39334.4	11-May-81
OBS-97	34.063	76.925		I-8105	27117.8	39319.8	11-May-81
OBS-98	34.064	77.000		I-8105	27131.0	39297.1	11-May-81
OBS-99	34.104	76.956		I-8105	27129.6	39322.3	11-May-81
OBS-100	34.137	76.922		I-8105	27121.9	39350.1	11-May-81
OBS-101	34.166	76.881		I-8105	27117.9	39374.5	11-May-81
OBS-102	34.204	76.853		I-8105	27114.5	39395.7	11-May-81
OBS-103	34.228	76.826		I-8105	27111.4	39414.5	11-May-81
OBS-104	34.260	76.806		I-8105	27110.0	39341.4	11-May-81
OBS-105	34.304	76.836		I-8105	27116.7	39425.8	11-May-81
OBS-106	34.114	76.784		I-8105	27110.1	39460.2	11-May-81
OBS-107	34.329	76.779		I-8105	27110.5	39475.9	11-May-81
OBS-108	34.358	76.773		I-8105	27110.5	39492.3	11-May-81
OBS-109	34.408	76.752		I-8105	27110.8	39521.3	11-May-81
OBS-110	34.459	76.734		I-8105	27112.0	39551.5	11-May-81
OBS-111	34.500	76.725		I-8105	27111.8	39573.8	11-May-81

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-112	34.481	76.674		I-0105	27101.4	39580.3	11-May-81
OBS-113	34.482	76.622		I-0105	27091.3	39595.5	11-May-81
OBS-114	34.481	76.553		I-0105	27079.4	39613.4	11-May-81
OBS-115	34.437	76.574		I-0105	27080.3	39587.4	11-May-81
OBS-116	34.402	76.489		I-0105	27063.1	39590.3	11-May-81
OBS-117	34.356	76.555		I-0105	27071.2	39552.8	11-May-81
OBS-118	34.305	76.684		I-0105	27076.7	39514.8	11-May-81
OBS-119	34.268	76.552		I-0105	27065.2	39518.3	11-May-81
OBS-120	34.251	76.409		I-0105	27053.1	39522.0	11-May-81
OBS-121	34.220	76.202		I-0105	27061.0	39490.8	11-May-81
OBS-122	34.186	76.605		I-0105	27069.5	39464.9	11-May-81
OBS-123	34.138	76.553		I-0105	27056.6	39462.3	11-May-81
OBS-124	34.100	76.488		I-0105	27043.9	39466.2	11-May-81
OBS-125	34.063	76.534		I-0105	27049.1	39437.3	11-May-81
OBS-126	34.030	76.505		I-0105	27055.9	39408.3	11-May-81
OBS-127	33.959	76.571		I-0105	27041.4	39402.4	11-May-81
OBS-128	33.001	76.579		I-0105	27052.0	39400.3	15-May-81
OBS-129	33.989	76.625		I-0105	27059.8	39386.3	15-May-81
OBS-130	34.000	76.659		I-0105	27067.1	39374.0	15-May-81
OBS-131	34.000	76.705		I-0105	27074.5	39361.4	15-May-81
OBS-132	34.000	76.739		I-0105	27081.9	39348.7	15-May-81
OBS-133	33.989	76.784		I-0105	27089.0	39335.4	15-May-81
OBS-134	34.000	76.830		I-0105	27096.7	39323.1	15-May-81
OBS-135	34.001	76.875		I-0105	27104.1	39310.3	15-May-81
OBS-136	33.989	76.909		I-0105	27111.2	39296.9	15-May-81
OBS-137	33.989	76.954		I-0105	27118.9	39284.1	15-May-81
OBS-138	33.988	77.000		I-0105	27126.1	39271.0	11-May-81
OBS-139	34.000	77.035		I-0105	27133.5	39257.7	15-May-81
OBS-140	34.000	77.081		I-0105	27140.8	39244.6	15-May-81
OBS-141	34.000	77.125		I-0105	27148.0	39231.7	15-May-81
OBS-142	34.000	77.160		I-0105	27155.0	39218.7	15-May-81
OBS-143	33.989	77.205		I-0105	27161.9	39205.3	16-May-81
OBS-144	33.989	77.250		I-0105	27169.2	39192.0	16-May-81
OBS-145	34.000	77.285		I-0105	27176.5	39179.2	16-May-81
OBS-146	33.989	77.331		I-0105	27183.7	39165.4	16-May-81
OBS-147	34.000	77.375		I-0105	27191.2	39153.9	16-May-81
OBS-148	34.007	77.421		I-0105	27199.0	39143.1	16-May-81
OBS-149	34.008	77.457		I-0105	27206.4	39129.3	16-May-81
OBS-150	34.007	77.500		I-0105	27212.9	39116.2	16-May-81
OBS-151	34.008	77.553		I-0105	27222.4	39098.6	16-May-81
OBS-152	34.007	77.623		I-0105	27233.3	39076.7	16-May-81
OBS-175(153)	33.758	77.573		CH-00-84	57551.0	39046.1	08-Jun-82
OBS-176(154)	33.766	77.566		CH-00-84	57551.0	39046.1	08-Jun-82

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-177(155)	33.780	77.566		CH-08-84	57554.1	39048.6	08-Jun-82
OBS-178(156)	34.138	77.916		CH-08-84	57557.8	39052.2	08-Jun-82
OBS-179(157)	33.752	77.543		CH-08-84	57555.6	39050.1	08-Jun-82
OBS-180(158)	33.760	77.547		CH-08-84	57557.9	39052.4	08-Jun-82
OBS-181(159)	33.304	77.299		CH-08-84	27129.9	57560.0	09-Jun-84
OBS-182(160)	33.293	77.308		CH-08-84	27130.8	57556.4	09-Jun-84
OBS-183(161)	33.278	77.318		CH-08-84	27131.6	57552.0	09-Jun-84
OBS-184(162)	33.263	77.332		CH-08-84	27132.9	57546.8	09-Jun-84
OBS-185(163)	33.252	77.320		CH-08-84	27130.1	57548.4	09-Jun-84
OBS-186(164)	33.237	77.314		CH-08-84	27128.1	57548.1	09-Jun-84
OBS-187(165)	33.239	77.306		CH-08-84	27126.3	57548.3	09-Jun-84
OBS-188(166)	33.215	77.299		CH-08-84	27124.4	57549.0	09-Jun-84
OBS-189(167)	33.215	77.298		CH-08-84	27124.3	57549.2	09-Jun-84
OBS-190(168)	33.198	77.293		CH-08-84	27122.3	57548.4	09-Jun-84
OBS-191(169)	33.198	77.292		CH-08-84	27122.2	57548.6	09-Jun-84
OBS-192(170)	33.182	77.287		CH-08-84	27120.4	57547.9	09-Jun-84
OBS-193(171)	33.163	77.278		CH-08-84	27117.9	57547.5	09-Jun-84
OBS-194(172)	33.149	77.274		CH-08-84	27116.2	57546.8	09-Jun-84
OBS-195(173)	33.151	77.275		CH-08-84	27116.4	57547.0	09-Jun-84
OBS-196(174)	33.781	77.517		CH-08-84	27115.4	57546.6	09-Jun-84
OBS-197(175)	33.771	77.512		CH-08-84	27113.4	57545.4	09-Jun-84
OBS-198(176)	33.237	77.197		CH-08-84	27109.1	57576.5	10-Jun-84
OBS-199	33.802	77.605		CH-22-84	27216.1	57548.8	27-Nov-84
OBS-200	33.794	77.554		CH-22-84	27205.7	57560.1	28-Nov-84
OBS-201	33.793	77.553		CH-22-84	27205.7	57559.8	28-Nov-84
OBS-202	33.769	77.560		CH-22-84	27204.8	39050.2	28-Nov-84
OBS-203	33.796	77.561		CH-22-84	27206.9	39052.9	28-Nov-84
OBS-204	33.782	77.559		CH-22-84	27205.6	39051.9	30-Nov-84
OBS-205	33.853	77.666		RV Peirce	27205.6	39051.9	11-Dec-85
OBS-206	33.852	77.665		RV Peirce			11-Dec-85
OBS-207	33.849	77.664		RV Peirce			11-Dec-85
OBS-208	33.846	77.662		RV Peirce			11-Dec-85
OBS-209	33.839	77.656		RV Peirce			11-Dec-85
OBS-210	33.855	77.659		RV Peirce			12-Dec-85
OBS-211	33.951	77.657		RV Peirce			12-Dec-85
OBS-212	33.848	77.654		RV Peirce			12-Dec-85
OBS-213	33.846	77.650		RV Peirce			12-Dec-85
OBS-214	33.844	77.647		RV Peirce			12-Dec-85
OBS-215	33.839	77.644		RV Peirce			12-Dec-85
OBS-216	33.836	77.640		RV Peirce			12-Dec-85
OBS-217	33.834	77.638		RV Peirce			12-Dec-85
OBS-218	33.012	77.595		RV Peirce			12-Dec-85
OBS-219	33.774	77.591		RV Peirce			12-Dec-85

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-220	33.771	77.507		RV Peirce			12-Dec-85
OBS-221	33.815	77.624		RV Peirce			12-Dec-85
OBS-222	33.816	77.621		RV Peirce			12-Dec-85
OBS-223	33.813	77.618		RV Peirce			12-Dec-85
OBS-224	33.810	77.615		RV Peirce			12-Dec-85
OBS-225	33.807	77.612		RV Peirce			12-Dec-85
OBS-226	33.804	77.600		RV Peirce			12-Dec-85
OBS-227	33.801	77.605		RV Peirce			12-Dec-85
OBS-228	33.798	77.602		RV Peirce			12-Dec-85
OBS-229	33.794	77.599		RV Peirce			12-Dec-85
OBS-230	33.790	77.595		RV Peirce			12-Dec-85
OBS-231	33.787	77.592		RV Peirce			12-Dec-85
OBS-232	33.787	77.589		RV Peirce			12-Dec-85
OBS-233	33.781	77.586		RV Peirce			12-Dec-85
OBS-234	33.778	77.583		RV Peirce			12-Dec-85
OBS-235	33.774	77.413		RV Peirce			12-Dec-85
OBS-236	33.772	77.576		RV Peirce			12-Dec-85
OBS-237	33.768	77.572		RV Peirce			12-Dec-85
OBS-238	33.764	77.569		RV Peirce			12-Dec-85
OBS-239	33.761	77.566		RV Peirce			12-Dec-85
OBS-240	33.758	77.563		RV Peirce			12-Dec-85
OBS-241	33.756	77.560		RV Peirce			12-Dec-85
OBS-242	33.752	77.556		RV Peirce			12-Dec-85
OBS-243	33.749	77.554		RV Peirce			12-Dec-85
OBS-244	33.745	77.555		RV Peirce			12-Dec-85
OBS-245	33.743	77.547		RV Peirce			12-Dec-85
OBS-246	33.091	77.290		RV Peirce	57544.2	27110.2	13-Dec-85
OBS-247	33.092	77.290		RV Peirce	57544.5	27110.1	13-Dec-85
OBS-248	33.102	77.267		RV Peirce	57543.5	27111.9	13-Dec-85
OBS-249	33.115	77.269		RV Peirce	57544.9	27113.1	13-Dec-85
OBS-250	33.115	77.269		RV Peirce	57544.5	27114.7	13-Dec-85
OBS-251	33.139	77.281		RV Peirce	57544.9	27116.4	13-Dec-85
OBS-252	33.143	77.288		RV Peirce	57543.7	27117.9	13-Dec-85
OBS-253	33.160	77.291		RV Peirce	57545.3	27119.9	13-Dec-85
OBS-254	33.175	77.295		RV Peirce	57545.7	27120.8	13-Dec-85
OBS-255	33.188	77.300		RV Peirce	57546.0	27122.5	13-Dec-85
OBS-256	33.194	77.305		RV Peirce	57546.0	27123.7	13-Dec-85
OBS-257	33.208	77.311		RV Peirce	57546.3	27125.5	13-Dec-85
OBS-258	33.222	77.313		RV Peirce	57547.3	27126.9	13-Dec-85
OBS-259	33.223	77.320		RV Peirce	57546.8	27128.5	13-Dec-85
OBS-260	33.243	77.324		RV Peirce	57547.2	27129.8	13-Dec-85
OBS-261	33.254	77.328		RV Peirce	57547.6	27131.1	13-Dec-85
OBS-262	33.267	77.335		RV Peirce	57547.7	27133.1	13-Dec-85

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-263	33.278	77.330		RV Peirce	57548.4	27134.4	13-Dec-85
OBS-264	33.485	76.629		CH-0689	27029.1	39248.2	20-Jun-89
OBS-265	33.495	76.639		CH-0689	27031.3	39247.1	20-Jun-89
OBS-266	33.505	76.661		CH-0689	27035.7	39243.5	20-Jun-89
OBS-267	33.518	76.679		CH-0689	27039.4	39241.3	20-Jun-89
OBS-268	33.528	76.704		CH-0689	27044.4	39236.3	20-Jun-89
OBS-269	33.530	76.706		CH-0689	27044.6	39236.6	20-Jun-89
OBS-270	33.534	76.706		CH-0689	27045.1	39236.9	20-Jun-89
OBS-271	33.541	76.708		CH-0689	27045.7	39238.1	20-Jun-89
OBS-272	33.540	76.709		CH-0689	27045.8	39237.6	20-Jun-89
OBS-273	33.534	76.728		CH-0689	27048.9	39231.2	20-Jun-89
OBS-274	33.540	76.747		CH-0689	27052.4	39227.4	20-Jun-89
OBS-275	33.550	76.793		CH-0689	27060.9	39216.2	20-Jun-89
OBS-276	33.549	76.855		CH-0689	27071.3	39199.6	20-Jun-89
OBS-277	33.546	76.822		CH-0689	27065.6	39207.7	20-Jun-89
OBS-278	33.553	76.759		CH-0689	27055.1	39226.2	20-Jun-89
OBS-279	33.533	76.907		CH-0689	27079.1	39182.7	20-Jun-89
OBS-280	33.534	76.944		CH-0689	27082.7	39177.5	21-Jun-89
OBS-281	33.468	77.118		CH-0689	27110.5	39120.3	21-Jun-89
OBS-282	33.435	77.028		CH-0689	27093.3	39137.6	21-Jun-89
OBS-283	33.433	77.004		CH-0689	27089.2	39143.1	21-Jun-89
OBS-284	33.421	76.960		CH-0689	27081.2	39152.1	21-Jun-89
OBS-285	33.410	76.951		CH-0689	27079.0	39152.8	21-Jun-89
OBS-286	33.400	76.941		CH-0689	27076.6	39153.9	21-Jun-89
OBS-287	33.374	76.939		CH-0689	27074.8	39151.0	21-Jun-89
OBS-288	33.338	76.943		CH-0689	27073.2	39145.5	21-Jun-89
OBS-289	33.357	76.939		CH-0689	27073.6	39148.9	21-Jun-89
OBS-290	33.312	76.950		CH-0689	27072.9	39139.9	21-Jun-89
OBS-291	33.289	76.937		CH-0689	27069.2	39141.1	21-Jun-89
OBS-292	33.238	76.892		CH-0689	27058.8	39145.3	21-Jun-89
OBS-293	33.371	77.190		CH-0689	27116.2	39093.7	22-Jun-89
OBS-294	33.357	77.184		CH-0689	27114.3	39093.7	22-Jun-89
OBS-295	33.351	77.178		CH-0689	27112.9	39094.5	22-Jun-89
OBS-296	33.337	77.164		CH-0689	27109.7	39096.3	22-Jun-89
OBS-297	33.315	77.145		CH-0689	27105.3	39098.1	22-Jun-89
OBS-298	33.279	77.124		CH-0689	27099.6	39099.6	22-Jun-89
OBS-299	33.247	77.101		CH-0689	27093.8	39101.5	22-Jun-89
OBS-300	33.232	77.088		CH-0689	27090.8	39102.9	22-Jun-89
OBS-301	33.219	77.079		CH-0689	27088.7	39103.3	22-Jun-89
OBS-302	33.192	77.063		CH-0689	27084.4	39104.5	22-Jun-89
OBS-303	33.174	77.056		CH-0689	39104.4	27082.0	22-Jun-89
OBS-304	33.152	77.040		CH-0689	27078.2	39105.8	22-Jun-89
OBS-305	33.109	77.283		CH-0689	27114.9	39059.5	22-Jun-89

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OBS-306	33.077	77.259		CH-0689	27109.0	39061.9	22-Jun-89
OBS-307	33.053	77.237		CH-0689	27104.1	39064.4	22-Jun-89
OBS-308	32.975	77.550		CH-0689	27149.0	39020.9	23-Jun-89
OBS-309	32.971	77.365		CH-0689	27119.5	39042.6	23-Jun-89
OBS-310	33.006	77.377		CH-0689	27123.6	39041.9	23-Jun-89
OBS-311	33.018	77.306		CH-0689	27126.7	39041.4	23-Jun-89
OBS-312	33.046	77.390		CH-0689	27128.2	39041.2	23-Jun-89
OBS-313	33.059	77.392		CH-0689	27129.2	39041.2	23-Jun-89
OBS-314	33.076	77.399		CH-0689	27131.5	39040.9	23-Jun-89
OBS-315	33.901	77.405		CH-0689	27133.3	39040.6	23-Jun-89
OBS-316	33.106	77.413		CH-0689	27135.7	39039.9	23-Jun-89
OBS-317	33.142	77.421		CH-0689	27139.4	39039.4	23-Jun-89
OBS-318	33.177	77.438		CH-0689	27144.0	39038.6	23-Jun-89
OBS-319	33.191	76.441		CH-0689	27147.4	39038.7	23-Jun-89
OBS-320	33.206	77.439		CH-0689	27146.2	39039.3	23-Jun-89
OBS-321	33.086	77.588		CH-0689	27161.4	39019.0	23-Jun-89
OBS-322	33.034	77.559		CH-0689	27154.1	39020.8	24-Jun-89
OBS-323	33.021	77.553		CH-0689	27152.4	39021.2	24-Jun-89
OBS-324	32.974	77.547		CH-0689	27148.5	39021.3	24-Jun-89
OBS-325	32.950	77.540		CH-0689	27146.0	39021.5	24-Jun-89
RBS-1	34.487	76.418		CH-13-82	27053.6	39652.6	05-Jun-82
RBS-2	34.498	76.398		CH-13-82	27050.4	39663.7	05-Jun-82
RBS-3	34.509	76.379		CH-13-82	27047.5	39674.2	05-Jun-82
RBS-4	34.518	76.362		CH-13-82	27045.0	39683.5	05-Jun-82
RBS-5	34.526	76.345		CH-13-82	27042.3	39692.0	05-Jun-82
RBS-6	34.535	76.327		CH-13-82	27039.5	39701.4	05-Jun-82
RBS-7	34.553	76.304		CH-13-82	27034.4	39719.1	05-Jun-82
RBS-8	34.570	76.260		CH-13-82	27029.1	39737.1	05-Jun-82
RBS-9	34.588	76.226		CH-13-82	27023.7	39755.1	05-Jun-82
RBS-10	34.607	76.192		CH-13-82	27018.5	39773.7	05-Jun-82
RBS-11	34.626	76.160		CH-13-82	27013.5	39791.6	05-Jun-82
OBD-1	33.713	77.607	38071	E-3-80	27208.3	57534.5	17-May-80
OBD-1	33.713	77.615	dredge/up	E-3-80	27209.8	57532.3	17-May-80
OBD-2	33.717	77.612	38072	E-3-80	27209.6	57533.5	17-May-80
OBD-2	33.722	77.613	dredge/up	E-3-80	27210.2	57533.6	17-May-80
OBD-3	33.735	77.602	38073	E-3-80	27208.7	57538.7	17-May-80
OBD-3	33.732	77.598	dredge/up	E-3-80	27208.7	57539.3	17-May-80
OBD-4	33.742	77.587	38074	E-3-80	27206.7	57543.6	17-May-80
OBD-4	33.735	77.588	dredge/up	E-3-80	27206.7	57541.8	17-May-80
OBD-5	33.758	77.527	38075	E-3-80	27197.5	39656.7	17-May-80
OBD-5	33.745	77.507	dredge/up	E-3-80	27195.0	39060.3	17-May-80
OBD-6	33.748	77.525	38076	E-3-80	27198.0	39056.6	17-May-80
OBD-6			dredge/up	E-3-80	27196.5	39057.0	17-May-80

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
080-7	33.757	77.510	38077	E-3-80	27197.2	39058.1	17-May-80
080-7	33.768	77.525	dredge/up	E-3-80	27198.6	39057.3	17-May-80
080-8			38082	E-3-80	27209.3	39046.8	18-May-80
080-8	33.777	77.582	dredge/up	E-3-80	27209.7	39046.2	18-May-80
080-9	34.074	77.350		CH-08-84	27191.7	39186.4	6-June-84
080-9	34.075	77.346	dredge/up	CH-08-84	27191.1	39187.8	6-June-84
080-10	34.071	77.360		CH-08-84	27193.3	39181.8	6-June-84
080-10	34.074	77.352	dredge/up	CH-08-84	27192.2	39185.6	6-June-84
080-11	33.784	77.599		CH-08-84	45233.5	59090.9	8-June-84
080-11	33.777	77.604	dredge/up	CH-08-84	45232.9	59094.2	8-June-84
080-12	33.784	77.597		CH-08-84	45233.2	59090.8	8-June-84
080-12	33.777	77.602	dredge/up	CH-08-84	45232.6	59093.9	8-June-84
080-13	33.784	77.518		CH-08-84	27114.5	57547.3	9-June-84
080-13	33.782	77.515	dredge/up	CH-08-84	27114.4	57547.1	9-June-84
080-14	33.783	77.517		CH-08-84	27115.2	57546.9	10-June-84
080-14	33.795	77.519	dredge/up	CH-08-84	27115.7	57548.8	10-June-84
080-15	33.793	77.519		CH-08-84	27114.4	57548.2	10-June-84
080-15	33.796	77.513	dredge/up	CH-08-84	27115.2	57551.8	10-June-84
080-16	33.824	77.548		CH-08-84	27126.7	57547.6	10-June-84
080-16	33.832	77.551	dredge/up	CH-08-84	27126.7	57548.0	10-June-84
080-17	33.335	77.219		CH-08-84	27118.8	57584.7	10-June-84
080-17	33.338	77.219	dredge/up	CH-08-84	27119.0	57585.2	10-June-84
080-18	33.217	77.208		CH-08-84	27109.7	57571.3	10-June-84
080-18	33.227	77.200	dredge/up	CH-08-84	27109.8	57575.0	10-June-84
080-19	33.340	77.213		CH-08-84	27110.2	57585.7	10-June-84
080-19	33.345	77.207	dredge/up	CH-08-84	27117.6	57587.6	10-June-84
080-20	33.312	77.222		CH-08-84	27118.0	57581.1	10-June-84
080-20	33.337	77.213	dredge/up	CH-08-84	27118.1	57585.0	10-June-84
080-23	33.795	77.569		CH-22-84	27207.5	57555.4	28-Nov-84
080-23	33.774	77.552	dredge/up	CH-22-84	27203.7	37557.9	28-Nov-84
080-24	33.782	77.540		CH-22-84	27202.3	39056.6	30-Nov-84
080-24	33.770	77.537	dredge/up	CH-22-84	27200.7	57560.7	30-Nov-84
080-25	33.508	77.412		CH-22-84	27163.9	39059.6	30-Nov-84
080-25	33.518	77.416	dredge/up	CH-22-84	27161.9	39061.1	30-Nov-84
080-26	33.523	77.403		CH-22-84	27161.6	39061.9	30-Nov-84
080-26	33.529	77.399	dredge/up	CH-22-84	27161.3	39063.6	30-Nov-84
080-27				CH-22-84	27202.2	57559.7	1-Dec-84
080-27			dredge/up	CH-22-84	27202.3	57560.4	1-Dec-84
080-28	33.129	77.268		CH-06-89	27113.7	39062.9	22-June-89
080-28	33.145	77.272	dredge/up	CH-06-89	27115.3	39063.1	22-June-89
080-29	33.098	77.408		CH-06-89	27134.3	39040.3	22-June-89
080-29	33.082	77.407	dredge/up	CH-06-89	27133.0	39040.0	22-June-89
080-30	32.974	77.548		CH-06-89	27140.7	39020.9	22-June-89

SAMPLE LOCATIONS

Sample	Latitude	Longitude	Station	Cruise	Loran1	Loran2	Date
OB0-30	32.997	77.555	dredge/up	CH-06-89	27151.2	39020.7	22-June-89
OB-8C-1	33.766	77.566		CH-08-84	57551.0	39046.1	08-Jun-82
OB-8C-2				CH-08-84	57554.1	39048.6	08-Jun-82
OB-8C-3	33.753	77.544		CH-08-84	57557.8	39052.4	08-Jun-82
OB-8C-4	33.775	77.550		CH-08-84	57555.6	39050.1	08-Jun-82
OB-8C-5	33.759	77.547		CH-08-84	57557.9	39052.4	08-Jun-82
OB-8C-6	33.484	76.634					
OB-8C-8				CH-06-89	27029.9	39246.8	20-Jun-89
OB-8C-9	33.238	77.090		CH-06-89	27091.5	39102.9	22-Jun-89
OB-8C-10	33.175	77.056		CH-06-89	27082.1	39104.6	22-Jun-89
OB-8C-11	33.181	77.053		CH-06-89	27082.1	39105.6	22-Jun-89
OB-8C-12	33.048	77.229		CH-06-89	27102.5	39065.4	22-Jun-89
OB-8C-13	32.974	77.366		CH-06-89	27120.0	39042.4	23-Jun-89
OB-8C-14	33.017	77.378		CH-06-89	27124.5	39042.0	23-Jun-89
OB-8C-15	32.950	77.538		CH-06-89	27145.5	39021.9	24-Jun-89
OB-8C-101	34.006	77.389		CH-06-91	27193.0	57631.1	22-MAY-91
OB-8C-102	34.006	77.389		CH-06-91	27193.3	57630.8	22-MAY-91
OB-8C-103	34.001	77.372		CH-06-91	27189.8	57634.8	22-MAY-91
OB-8C-104	33.993	77.356		CH-06-91	27186.5	57637.7	22-MAY-91
OB-8C-105	33.989	77.344		CH-06-91	27184.2	57640.2	22-MAY-91
OB-8C-106	33.986	77.351		CH-06-91	27185.3	57637.8	22-MAY-91
OB-8C-107	33.999	77.383		CH-06-91	27191.5	57631.8	22-MAY-91
OB-8C-108	33.809	77.617		CH-06-91	27216.8	57546.0	22-MAY-91
OB-8C-109A	33.789	77.631		CH-06-91	27216.3	57542.0	23-May-91
OB-8C-109B	33.787	77.623		CH-06-91	27216.2	57542.0	23-May-91
OB-8C-109C	33.785	77.622		CH-06-91	27216.0	57541.7	23-May-91
OB-8C-110	33.784	77.626		CH-06-91	27216.5	57541.0	23-May-91
OB-8C-111	33.758	77.595		CH-06-91	27209.3	57545.3	23-May-91
OB-8C-112	33.784	77.543		CH-06-91	27202.8	57561.9	23-May-91
OB-8C-P1	33.795	77.548		RV Peirce	27202.8	57561.9	10-Dec-85
OB-8C-P2	33.795	77.548		RV Peirce	27202.2	57561.8	11-Dec-85
OB-8C-P3	33.784	77.543		RV Peirce	27202.2	57561.8	11-Dec-85
OB-8C-P4	33.790	77.544		RV Peirce			11-Dec-85
OB-8C-P5	33.550	77.789		RV Peirce			11-Dec-85
OBG-1	33.168	77.057		CH-06-89	27081.8	39103.9	22-Jun-89
OBG-2	33.046	77.224		CH-06-89	27101.6	39066.2	22-Jun-89

STRATIGRAPHIC UNITS OCCURRING IN VIBRACORES

This data file presents the stratigraphic units identified within each vibracore obtained in Onslow Bay, North Carolina during the Onslow Bay project. Stratigraphic assignments represent the most recent core interpretations and are based upon many avenues of research carried out on these cores including the seismic-stratigraphy (Stephen W. Snyder and others, 1982, 1990), biostratigraphy (Scott W. Snyder, 1988, 1990), lithofacies analysis (Riggs, 1984; Riggs and others, 1985, 1990; Riggs and Mallette, 1990), and ongoing isotopic analysis and radiometric age-dating (Stille and others, in press) and as summarized in Riggs and Ames (1992). The key for the various stratigraphic units and included data is as follows.

Column 1: CORE

OB 11 Onslow Bay vibracore number 11

Column 2: HOLOCENE

Thickness of active surface sands that are responding to modern energy regimes. This includes shelf sediments that have been deposited since the last glacial maximum and sea-level lowstand at approximately 18,000 years before present. Depths are in meters below sediment-water interface.

Column 3: PLEISTOCENE

Thickness of unconsolidated to consolidated sands, muddy sands, muds, and limestones that are of Pleistocene age. Depth and thickness of unit recovered in the core are in meters below sediment-water interface.

Columns 4, 5, and 6: MIOCENE/OLIGOCENE

Thickness of unconsolidated to consolidated sands, muddy sands, muds, phosphorites, dolomites, and limestones that are of Miocene or Oligocene age. The Miocene units are part of the Pungo River Formation; the Oligocene units are part of the Silverdale Formation. The name Silverdale Formation, used throughout this report to refer to the uppermost portion of the pre-Pungo River section, was applied by Baum and others (1978) to a sandy, pelecypod-mold bimicrudite that grades upward to an unconsolidated, sandy, pelecypod biomicrodite. Approximately the same section was named the Haywood Landing Member of the Belgrade Formation by Ward and others (1978). This second terminology is also in use (for example, North Carolina Geological Survey (1985)). Column 4 is the uppermost unit, if present. Column 5 is the next lower or older unit, if present. Column 6 is the lowest and oldest unit, if present. Depth and thickness of unit recovered in the core are given in meters below sediment-water interface.

STRATIGRAPHIC UNITS OCCURRING IN VIBRACORES

CORE	HOLOCENE	PLEISTOCENE	M I O C E N E / O L I G O C E N E						unit
	depth (m)	depth (m)	depth (m)	unit	depth (m)	unit	depth (m)		
OB 1	-	0 to 3.0	3.0 to 9.0	BBS-8	-	-	-	-	
OB 2	0 to 0.6	0.6 to 2.7	2.7 to 7.1	BBS-1	-	-	-	-	
OB 3	-	0 to 0.8	0.8 to 8.7	BBS-1	8.7 to 9.3	OBS-4	-	-	
OB 4	0 to 0.5	0.5 to 2.1	2.05 to 9.1	BBS-1	-	-	-	-	
OB 5	0 to 0.5	0.5 to 7.8	-	-	-	-	-	-	
OB 6B	-	-	0 to 7.5	BBS-1	-	-	-	-	
OB 7	0 to 0.8	0.8 to 3.4	3.4 to 5.8	Oligocene	-	-	-	-	
OB 8	0 to 1.7	1.7 to 5.1	5.1 to 6.0	Oligocene	-	-	-	-	
OB 9	0 to 1.6	-	1.6 to 3.3	FPS-1	-	-	-	-	
OB 10	0 to 0.4	-	0.4 to 9.1	Oligocene	-	-	-	-	
OB 11	-	-	0 to 2.1	FPS-1	2.1 to 9.0	Oligocene	-	-	
OB 12	-	-	0 to 9.1	Oligocene	-	-	-	-	
OB 13	0 to 0.2	-	0.2 to 5.4	Oligocene	-	-	-	-	
OB 14	0 to 0.8	-	0.8 to 5.0	FPS-1	5.0 to 6.7	Oligocene	-	-	
OB 15	-	-	0 to 1.9	OBS-U	-	-	-	-	
OB 16	-	-	0 to 6.1	OBS-U	-	-	-	-	
OB 17	0 to 1.3	1.3 to 2.5	2.5 to 6.3	OBS-U	-	-	-	-	
OB 18	0 to 1.1	1.1 to 2.5	2.6 to 8.9	Oligocene	-	-	-	-	
OB 19	0 to 0.2	0.2 to 2.1	2.1 to 6.5	Oligocene	-	-	-	-	
OB 20	-	0 to 0.8	0.8 to 1.5	FPS-2	1.5 to 6.1	FPS-1	-	-	
OB 21	0 to 0.3	0.3 to 2.7	2.9 to 3.3	Oligocene	-	-	-	-	
OB 22	0 to 0.5	0.5 to 2.7	2.7 to 5.7	FPS-1	-	-	-	-	
OB 23	0 to 0.3	0.3 to 1.4	1.4 to 2.9	FPS-1	-	-	-	-	
OB 24	0 to 0.3	0.3 to 0.4	0.4 to 1.8	FPS-1	1.8 to 9.3	Oligocene	-	-	
OB 25	0 to 1.3	-	1.3 to 1.8	FPS-1	1.8 to 7.7	Oligocene	-	-	
OB 26	-	-	0 to 4.3	FPS-1	4.3 to 9.5	Oligocene	-	-	
OB 27	0 to 0.5	-	0.5 to 7.9	FPS-2	-	-	-	-	
OB 28	0 to 0.1	-	0.1 to 3.8	FPS-2	-	-	-	-	
OB 29	0 to 1.0	1.0 to 2.8	2.8 to 3.9	FPS-2	-	-	-	-	
OB29b	0 to 1.0	1.0 to 2.8	2.8 to 8.6	FPS-2	8.6 to 10.0	FPS-1	-	-	
OB 30	0 to 0.9	-	0.9 to 2.9	FPS-1	2.9 to 6.8	Oligocene	-	-	
OB 31	0 to 0.5	0.5 to 5.7	5.7 to 7.0	Oligocene	-	-	-	-	
OB 32	*****NO CORE*NO CORE*NO*****								
OB 33	-	-	0 to 5.8	OBS-4	5.8 to 9.2	OBS-3	-	-	
OB 34	0 to 0.4	0.4 to 1.2	1.2 to 3.2	OBS-3	3.2 to 9.0	OBS-1	-	-	

STRATIGRAPHIC UNITS OCCURRING IN VIBRACORES

CORE	HOLOCENE		PLEISTOCENE		M I O C E N E		O L I G O C E N E		unit
	depth (m)		depth (m)		depth (m)		depth (m)		
OB 35	0 to 0.4	0.4 to 0.7	0.7 to 7.9	OBS-1	-	-	-	-	
OB 36	0 to 0.3	0.3 to 1.5	1.5 to 3.7	BBS-1	3.7 to 5.4	OBS-4	-	-	
OB 37	-	-	0 to 5.3	FPS-5	5.3 to 8.4	FPS-4	8.4 to 9.0	Oligocene	
OB 38	-	-	0 to 1.8	OBS-2	1.8 to 9.2	OBS-1	-	-	
OB 39	-	-	0 to 8.3	BBS-1	8.3 to 9.2	OBS-2	-	-	
OB 40	-	0 to 7.8	7.8 to 9.3	OBS-1	-	-	-	-	
OB 41	0 to 0.9	-	0.9 to 8.2	OBS-1	-	-	-	-	
OB 42	0 to 0.5	0.5 to 1.1	1.1 to 7.1	BBS-1	-	-	-	-	
OB 43	0 to 0.4	-	0.4 to 4.6	BBS-1	-	-	-	-	
OB 44	0 to 1.0	1.0 to 1.4	1.4 to 6.0	OBS-1	-	-	-	-	
OB 45	0 to 0.5	-	0.5 to 5.8	FPS-6	-	-	-	-	
OB 46	-	0 to 1.6	1.6 to 8.7	FPS-5	-	-	-	-	
OB 47	-	-	0 to 7.5	FPS-2	7.5 to 9.3	FPS-1	-	-	
OB 48	0 to 0.2	-	0.2 to 8.4	FPS-3	-	-	-	-	
OB 49	0 to 0.7	-	0.7 to 9.1	FPS-2	-	-	-	-	
OB 50	0 to 0.6	-	0.6 to 2.0	FPS-6	2.0 to 9.1	FPS-5	-	-	
OB 51	0 to 0.6	-	0.6 to 9.1	OBS-1	-	-	-	-	
OB 52	0 to 0.8	0.8 to 2.7	2.7 to 4.3	BBS-1	-	-	-	-	
OB 53	0 to 0.8	-	0.8 to 6.5	BBS-2	-	-	-	-	
OB 54	0 to 1.3	-	1.3 to 3.6	Oligocene	-	-	-	-	
OB 55	0 to 2.4	-	2.4 to 8.3	Oligocene (?)	-	-	-	-	
OB 56	0 to 0.8	0.8 to 6.7 (?)	-	-	-	-	-	-	
OB 57	-	-	0.0 to 5.6	FPS-6	5.6 to 9.1	FPS-5	-	-	
OB 58	-	0 to 1.0	1.0 to 9.3	OBS-2	-	-	-	-	
OB 59	-	0 to 5.9	5.9 to 8.2	BBS-1	-	-	-	-	
OB 60	0 to 0.9	0.9 to 2.0 (?)	2.0 to 7.9	BBS-3	-	-	-	-	
OB 61	0 to 1.0	-	1.0 to 6.1	Oligocene	-	-	-	-	
OB 62	0 to 0.8	0.8 to 3.3	3.3 to 5.8	OBS-u	-	-	-	-	
OB 63	-	-	0 to 2.7	FPS-2	2.7 to 2.8 (cutter head)	-	-	-	
OB 64	0 to 0.9	0.9 to 3.3	3.3 to 6.4	FPS-1	-	-	-	-	
OB 65	0 to 0.5	0.5 to 1.5	1.5 to 4.4	FPS-2	-	-	-	-	
OB 66	0 to 0.7	0.8 to 1.0	1.0 to 2.9	FPS-6	2.9 to 3.5	FPS-3	-	-	
OB 67	0 to 1.5	1.5 to 3.1	3.1 to 7.6	FPS-6	-	-	-	-	
OB 68	-	-	0 to 2.8	OBS-3	2.8 to 4.4	OBS-2	-	-	
OB 69	-	0 to 7.4	-	-	-	-	-	-	

STRATIGRAPHIC UNITS OCCURRING IN VIBRACORES

CORE	HOLOCENE		PLEISTOCENE		M I O C E N E		O L I G O C E N E		unit	
	depth (m)		depth (m)		depth (m)		depth (m)			
08 70	-		0	to 0.6	0.6	to 2.2			FPS-2	-
08 71	0	to 0.1	-		0.1	to 1.1			BBS-1	-
08 72	0	to 0.2	-		0.2	to 3.8			BBS-2	3.8 to 4.2
08 73	?			to 9.1						BBS-1
08 74	0	to 0.2	0.2	to 4.3						-
08 75	?			to 4.1						-
08 76	-		0	to 1.0	1.0	to 2.5			Oligocene	-
08 77	0	to 1.1	-		1.1	to 8.1			Oligocene	-
08 78	?			to 0.2						-
08 79	-		0	to 4.5	4.5	to 5.7			BBS-1	-
08 80	-		0	to 4.9	4.9	to 5.7			BBS-1	-
08 81	?			to 2.0						-
08 82	?			to 2.6						-
08 83	?			to 4.4						-
08 84	?			to 6.1						-
08 85	?			to 6.5						-
08 86	?			to 6.1						-
08 87	?			to 6.1						-
08 88	?			to 6.1						-
08 89	-		0	to 5.7						-
08 90	0	to 0.7	0.7	to 3.5	3.5	to 6.0			BBS-8 (?)	-
08 91	0	to 0.7	0.7	to 2.5	2.5	to 6.0			BBS-1	-
08 92	0	to 3.1	3.1	to 4.4	4.4	to 6.2			BBS-4	-
0893a	0	to 0.2	0.2	to 0.2						-
0893b	0	to 3.9								-
08 94	0	to 0.5	-		0.5	to 1.9			BBS-2	-
08 95	0	to 0.5	-		0.5	to 2.2			BBS-3	2.2 to 2.4
08 96	0	to 0.9	-		0.9	to 6.3			FPS-6	-
08 97	0	to 0.5	0.5	to 0.4	0.4	to 6.9			FPS-2	-
08 98	0	to 1.4	-		1.4	to 4.2			FPS-2	-
08 99	-		0	to 7.5						-
08100	0	to 1.2	1.2	to 4.4	4.4	to 8.7			BBS-8	-
08101	-		0	to 5.1	5.1	to 8.6			FPS-4 (?)	-
08102	-		-		0	to 8.8			FPS-6	-
08103	0	to 0.7	-		0.7	to 5.9			FPS-2	-

STRATIGRAPHIC UNITS OCCURRING IN VIBRACORES

CORE	HOLOCENE	PLEISTOCENE	M I D C E N E / O L I G O C E N E					
	depth (m)	depth (m)	depth (m)	unit	depth (m)	unit	depth (m)	unit
OB104	0 to 4.5	-	4.5 to 6.0	FPS-2	6.0 to 7.2	FPS-1	-	-
OB105	-	-	0 to 4.5	FPS-2	4.5 to 9.1	FPS-1	-	-
OB106	0 to 0.9	-	0.9 to 9.1	Oligocene	-	-	-	-
OB107	0 to 0.3	-	0.3 to 2.8	FPS-6	-	-	-	-
OB108	0 to 1.8	-	1.8 to 5.5	BBS-5	-	-	-	-
OB109	0 to 0.2	-	0.2 to 5.6	BBS-2	5.6 to 6.2	BBS-1	-	-
OB110	0 to 0.38	-	0.38 to 6.2	FPS-2	-	-	-	-
OB111	-	-	0 to 4.6	OBS-4	4.6 to 8.6	OBS-3	-	-
OB112	0 to 0.8	0.8 to 4.1	-	-	-	-	-	-
OB113a	0 to 0.2	-	0.2 to 2.3	FPS-1	-	-	-	-
OB113b	0 to 0.8	-	0.8 to 4.6	FPS-1	-	-	-	-
OB114	0 to 1.8	1.8 to 5.3	5.3 to 8.2	FPS-1	-	-	-	-
OB115	0 to 0.9	0.9 to 5.4	5.4 to 7.4	FPS-1	7.4 to 9.3	Oligocene	-	-
OB116	-	-	0 to 3.4	FPS-1	-	-	-	-
OB117	-	0 to 2.2	2.2 to 9.0	FPS-2	-	-	-	-
OB118	-	0 to 1.8	1.8 to 9.1	FPS-6	-	-	-	-
OB119	-	0 to 0.1	0.1 to 3.7	FPS-1	-	-	-	-
OB120	0 to 0.8	0.8 to 4.0	4.0 to 7.1	FPS-1	7.1 to 7.8	Oligocene	-	-
OB121	0 to 0.2	-	0.2 to 6.7	Oligocene	-	-	-	-
OB122	0 to 2.1	-	-	-	-	-	-	-
OB123	-	-	0 to 6.6	FPS-2	-	-	-	-
OB124	0 to 0.6	0.6 to 4.8	-	-	-	-	-	-
OB125	0 to 0.8	-	0.8 to 5.2	BBS-2	-	-	-	-
OB126	-	-	0 to 8.4	Oligocene	-	-	-	-
OB127	0 to 1.3	-	1.3 to 8.6	FPS-1	-	-	-	-
OB128	0 to 1.5	-	1.5 to 6.6	FPS-5	-	-	-	-
OB129	0 to 2.1	-	2.1 to 8.5	FPS-3	-	-	-	-
OB130	0 to 0.5	-	0.5 to 4.1	FPS-1	-	-	-	-
OB131	0 to 1.9	1.9 to 6.4	-	-	-	-	-	-
OB132	0 to 0.3	0.3 to 1.0	1.0 to 3.9	FPS-1	-	-	-	-
OB133	lost core	samples from liner in bags	-	-	-	-	-	-
OB134	poor core	samples in bags; total depth 0.2m(?)	-	-	-	-	-	-
OB135	0 to 0.15	-	0.2 to 6.8	FPS-1	-	-	-	-

CHEMICAL DATA FOR VIBRACORE AND SURFACE BULK-SEDIMENT SAMPLES

This file contains all chemical data obtained by various laboratories on bulk-sediment samples from vibracores in Onslow Bay, North Carolina. The last two pages (pages 81 and 82) in this file include the chemical data obtained on bulk-sediments from SHIPEK surface samples in Onslow Bay. Data are organized sequentially by vibracore number beginning with OB-1 and depth in the core beginning at the sediment-water surface or sequentially by SHIPEK sample number beginning with OBS-1.

Due to the large number of data entrees per sample, each sample requires three rows of data. Consequently, the data for 1 set of samples are presented in sets of three rows that occupy one full page. Since all SHIPEK surface samples are from the sediment-water interface, water depth equals the sample depth. Blanks indicate that the samples were not analyzed for that element.

Four types of data are presented in this section.

1. *Columns 1 through 8:* Location data include the sample number, vibracore hole or SHIPEK sample number, stratigraphic unit, latitude and longitude of sample location, top and bottom depth of sample in the vibracore, and water depth at the sample site.

2. *Columns 9 through 21:* All of these chemical analyses were done by Inductively Coupled Argon Plasma Emission Spectrometry (ICAPES) by Dr. John T. Bray of the Trace Elements Laboratory, School of Medicine, East Carolina University, Greenville, North Carolina. The samples were digested utilizing a hydrofluoric bomb technique. Concentrations of the digested solutions were determined in ppm of the element. Concentrations of major elements were then converted to percent oxides of the dry material and concentrations of copper and zinc were converted to ppm of the dry material. All ICAPES data are quantitative; only the elements with good reproducibility, hence high reliability have been included.

3. *Columns 9 through 16 and 22 through 26:* Data that occur in these columns are for major elements (in weight percent) and were done in one of the following industrial laboratories:

Agrico Chemicals Corp., Bartow, FL
North Carolina State University, Mineral Research Laboratory, Asheville, NC
Texasgulf, Inc., Aurora, NC
W.R. Grace Inc., Bartow, FL

This group of analyses was done using standard wet chemical procedures utilized by the phosphate industry on phosphate concentrates and as outlined by the Association of Florida Phosphate Chemists (1980). Analytical numbers are not adjusted for percent insoluble residue.

Each of the four labs analyzed for different elements on samples that they ran. Consequently, each sample has different elements included in the data set.

4. *Columns 27 through 40:* Data that occur in these columns are from chemical analyses done by Energy Dispersive X-ray Fluorescence (EDXRF) instrumentation by Dr. John T. Bray of the Trace Elements Laboratory, School of Medicine, East Carolina University, Greenville, North Carolina. This is a thin-film EDXRF analysis of a powdered sample. Data are reported as ppm or percent of the dry powder and are qualitative or semi-quantitative, at best.

Column 1: SPL NUM

- OB-1A Onslow Bay vibracore number 1, sample A.
- BR-1 Onslow Bay vibracore bulk rock analysis number 1.
- BR123 Onslow Bay SHIPEK surface sample bulk rock analysis number 123.
- ML-4 Onslow Bay vibracore or SHIPEK surface sample metallurgical lab analysis number 4
- 5 Onslow Bay vibracore sample number 5.
- P-7 Onslow Bay vibracore minicore number 7 (frozen for carbon analysis).

Column 2: HOLE

- OB-11 Onslow Bay vibracore number 11; all cores are from the Onslow Bay Project between 1980-90 with locations based upon Loran C navigation.
- OBS-1 Onslow Bay SHIPEK sample number 1; all SHIPEK samples are from the Onslow Bay Project between 1980-90 with locations based upon Loran C navigation.

Column 3: UNIT

- Holocene: Modern shelf sand, gravelly sand, and gravel
- Pleistocene: Undifferentiated
- Miocene: Pungo River Formation
 - Bogue Banks Sequences
 - BBS-8
 - BBS-7
 - BBS-6
 - BBS-5
 - BBS-4
 - BBS-3
 - BBS-2
 - BBS-1
 - Onslow Bay Sequences
 - OBS-U (Undifferentiated)*
 - OBS-4
 - OBS-3
 - OBS-2
 - OBS-1
 - Frying Pan Sequences
 - FPS-6
 - FPS-5
 - FPS-4
 - FPS-3
 - FPS-2
 - FPS-1
- Oligocene: Silverdale Formation

* Where data are insufficient to identify the specific OBS sequence, it is listed as "OBS-U".

Column 4: LAT

Location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 5: LONG

Location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 6: TOP DEPTH

Depth in meters in vibracore to top of bulk-sediment sample.

Column 7: BOT DEPTH

Depth in meters in vibracore to bottom of bulk-sediment sample.

Column 8: H2ODEPTH

Depth of water in meters to sediment-water interface at sample site. There is a variability in these numbers that is a function of the tide, type of fathometer utilized, correction for transducer location on ship, etc.

Columns 9 through 26: CHEMICAL DATA

COLUMN	ECU-ICAPES DATA	PHOSPHATE COMPANY DATA	DESCRIPTION
9	P2O5 %	P2O5 %	P ₂ O ₅ percent
10	CAO %	CAO %	CaO percent
11	SIO2 %	SIO2 %	SiO ₂ percent
12	MGO %	MGO %	MgO percent
13	FE2O3 %	FE2O3 %	Fe ₂ O ₃ percent
14	AL2O3 %	AL2O3 %	Al ₂ O ₃ percent
15	NA2O %	NA2O %	Na ₂ O percent
16	K2O %	K2O %	K ₂ O percent
17	TIO2 %		TiO ₂ percent
18	MNO %		MnO percent
19	SUM %		Sum of previous oxides in percent
20	CU PPM		Copper parts per million
21	ZN PPM		Zinc parts per million
22		INSOL %	Insoluble residue in percent
23		SO3 %	SO ₃ percent
24		F2 %	Fluoride percent
25		C %	Carbon percent
26		CO2 %	CO ₂ percent

Columns 27 through 40: CHEMICAL DATA

COLUMN	ECU-EDXRF DATA	DESCRIPTION
27	TI %	Titanium percent
28	ZR PPM	Zirconium parts per million
29	CR PPM	Chromium parts per million
30	V PPM	Vanadium parts per million
31	FE %	Iron percent
32	MN %	Manganese percent
33	CA %	Calcium percent
34	P %	Phosphorus percent
35	CO PPM	Cobalt parts per million
36	BR PPM	Bromine parts per million
37	RB PPM	Rubidium parts per million
38	SR PPM	Strontium parts per million
39	Y PPM	Yttrium parts per million
40	MO PPM	Molybdenum parts per million

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %	AL203 %
OB-1A	OB-1	BBS-8	34.640	76.768	3.75	4.00	16.0	3.35	16.50	49.1	1.18	1.47	2.80
OB-1A	OB-1	BBS-8	34.640	76.768	3.75	4.00	16.0	3.35	16.50	49.1	1.18	1.47	2.80
BR-1	OB-1	BBS-8	34.640	76.768	4.50	4.75	16.0	3.90	6.63	.	1.92	0.64	0.75
OB-1B	OB-1	BBS-8	34.640	76.768	4.75	5.00	16.0	4.10	13.70	56.7	2.56	0.78	1.42
OB-1B	OB-1	BBS-8	34.640	76.768	4.75	5.00	16.0	4.10	13.70	56.7	2.56	0.78	1.42
OB-1C	OB-1	BBS-8	34.640	76.768	5.75	6.00	16.0	4.07	9.03	50.2	1.64	1.18	2.40
OB-1C	OB-1	BBS-8	34.640	76.768	5.75	6.00	16.0	4.07	9.03	50.2	1.64	1.18	2.40
OB-1C	OB-1	BBS-8	34.640	76.768	5.75	6.00	16.0	4.07	9.03	50.2	1.64	1.18	2.40
OB-1C	OB-1	BBS-8	34.640	76.768	5.75	6.00	16.0	4.07	9.03	50.2	1.64	1.18	2.40

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPH
OB-1A	0.70	0.87	0.29	0.04	76.34	20	44	.	.	.	.	.	0.15	376.01	23.20
OB-1A	0.70	0.87	0.29	0.04	76.34	20	44	.	.	.	.	.	0.15	376.01	23.20
BR-1	.	.	.	.	.	.	.	65.70	.	.	.	.	.	.	.
OB-1B	0.50	0.63	0.28	0.02	80.74	36	41	.	.	.	.	.	0.27	200.33	20.00
OB-1B	0.50	0.63	0.28	0.02	80.74	36	41	.	.	.	.	.	0.27	200.33	20.00
OB-1C	0.80	0.57	0.29	0.01	70.21	31	51	.	.	.	.	.	0.15	120.93	27.29
OB-1C	0.80	0.57	0.29	0.01	70.21	31	51	.	.	.	.	.	0.15	120.93	27.29
OB-1C	0.80	0.57	0.29	0.01	70.21	31	51	.	.	.	.	.	0.15	120.93	27.29
OB-1C	0.80	0.57	0.29	0.01	70.21	31	51	.	.	.	.	.	0.15	120.93	27.29

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPM	Y PPM	MO PPH
OB-1A	21.28	1.18	0.01	10.20	2.47	9.49	85.84	19.33	602.21	49.73	22.93
OB-1A	21.28	1.18	0.01	10.20	2.47	9.49	85.84	19.33	602.21	49.73	22.93
BR-1	.	.	.	.	.	.	.	.	.	.	.
OB-1B	32.81	0.60	0.01	9.38	2.81	7.72	4.80	11.66	414.61	67.06	13.44
OB-1B	32.81	0.60	0.01	9.38	2.81	7.72	4.80	11.66	414.61	67.06	13.44
OB-1C	22.86	0.93	0.01	5.71	2.22	5.76	124.77	22.90	431.52	76.25	8.38
OB-1C	22.86	0.93	0.01	5.71	2.22	5.76	124.77	22.90	431.52	76.25	8.38
OB-1C	22.86	0.93	0.01	5.71	2.22	5.76	124.77	22.90	431.52	76.25	8.38
OB-1C	22.86	0.93	0.01	5.71	2.22	5.76	124.77	22.90	431.52	76.25	8.38

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	MOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	HGO %	FE203 %
BR-13	OB-1	BBS-8	34.640	76.768	6.00	6.25	16.0	4.70	10.13	.	1.60	0.71
ML-4	OB-1	BBS-8	34.640	76.768	6.25	6.75	16.0	4.71	12.86	.	1.69	1.10
OB-1D	OB-1	BBS-8	34.640	76.768	6.75	7.00	16.0	6.21	12.90	61.5	1.22	0.95
OB-1D	OB-1	BBS-8	34.640	76.768	6.75	7.00	16.0	6.21	12.90	61.5	1.22	0.95
OB-1D	OB-1	BBS-8	34.640	76.768	6.75	7.00	16.0	6.21	12.90	61.5	1.22	0.95
OB-1D	OB-1	BBS-8	34.640	76.768	6.75	7.00	16.0	6.21	12.90	61.5	1.22	0.95
BR-14	OB-1	BBS-8	34.640	76.768	7.00	7.25	16.0	6.09	11.50	.	0.82	0.57
OB-1E	OB-1	BBS-8	34.640	76.768	7.75	8.00	16.0	5.82	11.00	61.0	1.15	1.33
OB-1E	OB-1	BBS-8	34.640	76.768	7.75	8.00	16.0	5.82	11.00	61.0	1.15	1.33

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR-13	1.18	.	.	.	.	.	.	.	68.73	.	.	.	.	.	.
ML-4	1.38	0.64	0.31	.	.	.	.	.	69.80	1.59	0.59	0.63	4.05	.	.
OB-1D	1.66	0.60	0.51	0.31	1.28	87.21	18	59	.	.	.	.	.	.	.
OB-1D	1.66	0.60	0.51	0.31	1.28	87.21	18	59	.	.	.	.	.	.	.
OB-1D	1.66	0.60	0.51	0.31	1.28	87.21	18	59	.	.	.	.	.	.	.
OB-1D	1.66	0.60	0.51	0.31	1.28	87.21	18	59	.	.	.	.	.	.	.
BR-14	0.70	.	.	.	.	.	.	.	70.84	.	.	.	.	.	.
OB-1E	2.42	0.50	0.80	0.42	0.02	84.50	54	68	.	.	.	.	.	0.26	283.82
OB-1E	2.42	0.50	0.80	0.42	0.02	84.50	54	68	.	.	.	.	.	0.26	283.82

SPL NUM	CR PPH	V PPM	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPM	Y PPM	MO PPH
BR-13	.	.	.	.	.	.	.	.	.	.	.	.
ML-4	.	.	.	.	.	.	.	.	.	.	.	.
OB-1D	.	.	.	.	.	.	.	.	.	.	.	.
OB-1D	.	.	.	.	.	.	.	.	.	.	.	.
OB-1D	.	.	.	.	.	.	.	.	.	.	.	.
OB-1D	.	.	.	.	.	.	.	.	.	.	.	.
BR-14	.	.	.	.	.	.	.	.	.	.	.	.
OB-1E	33.44	24.18	0.99	0.01	5.96	3.73	7.98	64.79	19.58	483.47	101.60	21.16
OB-1E	33.44	24.18	0.99	0.01	5.96	3.73	7.98	64.79	19.58	483.47	101.60	21.16

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %	AL203 %
OB-1E	OB-1	BBS-8	34.640	76.768	7.75	8.00	16.0	5.82	11.00	61.0	1.15	1.33	2.42
OB-1E	OB-1	BBS-8	34.640	76.768	7.75	8.00	16.0	5.82	11.00	61.0	1.15	1.33	2.42
OB-1F	OB-1	BBS-8	34.640	76.768	8.75	9.00	16.0	5.25	11.80	56.2	1.28	1.32	2.37
OB-1F	OB-1	BBS-8	34.640	76.768	8.75	9.00	16.0	5.25	11.80	56.2	1.28	1.32	2.37
OB-1F	OB-1	BBS-8	34.640	76.768	8.75	9.00	16.0	5.25	11.80	56.2	1.28	1.32	2.37
OB-1F	OB-1	BBS-8	34.640	76.768	8.75	9.00	16.0	5.25	11.80	56.2	1.28	1.32	2.37
OB-1F	OB-1	BBS-8	34.640	76.768	8.75	9.00	16.0	5.25	11.80	56.2	1.28	1.32	2.37
BR-2	OB-1	BBS-8	34.640	76.768	8.90	9.10	16.0	5.21	9.82	.	1.02	0.68	1.13
OB-2A	OB-2	BBS-1	34.633	76.865	3.25	3.50	15.5	1.26	5.22	62.6	0.69	2.30	3.93
OB-2B	OB-2	BBS-1	34.633	76.865	6.25	6.50	15.5	1.92	4.06	67.4	0.65	1.99	4.26

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
OB-1E	0.50	0.80	0.42	0.02	84.50	54	68	.	.	.	.	.	0.26	283.82	33.44
OB-1E	0.50	0.80	0.42	0.02	84.50	54	68	.	.	.	.	.	0.26	283.82	33.44
OB-1F	0.60	0.42	0.49	0.02	79.82	52	52	.	.	.	.	.	0.29	486.69	44.80
OB-1F	0.60	0.42	0.49	0.02	79.82	52	52	.	.	.	.	.	0.29	486.69	44.80
OB-1F	0.60	0.42	0.49	0.02	79.82	52	52	.	.	.	.	.	0.29	486.69	44.80
OB-1F	0.60	0.42	0.49	0.02	79.82	52	52	.	.	.	.	.	0.29	486.69	44.80
OB-1F	0.60	0.42	0.49	0.02	79.82	52	52	.	.	.	.	.	0.29	486.69	44.80
BR-2	.	.	.	.	.	.	.	69.90	.	.	.	.	.	.	.
OB-2A	0.60	0.86	1.00	0.04	78.58	114	56	.	.	.	.	.	0.79	1100.34	46.75
OB-2B	0.60	0.89	0.91	0.04	82.81	105	67	.	.	.	.	.	0.32	413.61	45.91

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-1E	24.18	0.99	0.01	5.96	3.73	7.98	64.79	19.58	483.47	101.60	21.16
OB-1E	24.18	0.99	0.01	5.96	3.73	7.98	64.79	19.58	483.47	101.60	21.16
OB-1F	21.71	1.20	0.01	9.24	5.29	11.44	86.13	19.95	496.41	107.17	30.14
OB-1F	21.71	1.20	0.01	9.24	5.29	11.44	86.13	19.95	496.41	107.17	30.14
OB-1F	21.71	1.20	0.01	9.24	5.29	11.44	86.13	19.95	496.41	107.17	30.14
OB-1F	21.71	1.20	0.01	9.24	5.29	11.44	86.13	19.95	496.41	107.17	30.14
OB-1F	21.71	1.20	0.01	9.24	5.29	11.44	86.13	19.95	496.41	107.17	30.14
BR-2	.	.	.	.	.	.	.	.	.	.	.
OB-2A	32.02	2.42	0.03	5.52	2.33	21.65	90.94	32.44	265.45	71.17	63.96
OB-2B	53.33	1.96	0.03	3.70	2.92	15.47	41.53	30.54	224.35	71.53	24.66

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %	AL2O3 %
BR-22	OB-2B	BBS-1	34.467	76.865	4.75	5.00	15.5	1.96	2.26	.	0.95	1.25	1.46
ML-5	OB-2B	BBS-1	34.467	76.865	5.25	6.00	15.5	2.29	4.86	.	0.84	1.59	1.45
BR-3	OB-2B	BBS-1	34.467	76.865	6.10	6.25	15.5	4.55	7.29	.	0.82	0.85	1.18
5	OB-2B	BBS-1	34.467	76.865	6.10	6.25	15.5	1.76	3.36	.	1.16	2.15	4.53
BR-82	OB-3	OBS-4	34.628	76.890	8.70	9.10	14.5	1.59	46.43	.	4.57	0.34	0.46
BR-38	OB-4	BBS-1	34.608	76.913	5.75	6.00	14.5	3.81	5.47	.	0.45	0.57	1.05
BR-39	OB-4	BBS-1	34.608	76.913	8.90	9.10	14.5	3.74	9.77	.	0.42	0.39	0.77
OB-6BA	OB-6B	BBS-1	34.443	76.943	3.00	3.25	20.0	1.62	2.87	65.8	0.99	2.07	5.77
BR-35	OB-6B	BBS-1	34.443	76.943	5.75	6.00	20.0	2.08	1.71	.	0.60	1.04	1.57

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
BR-22	.	.	.	.	.	.	.	84.11	.	.	.	.	.	.	.
ML-5	0.30	0.25	.	.	.	.	.	82.00	2.83	0.29	0.75	0.52	.	.	.
BR-3	.	.	.	.	.	.	.	75.18	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-82	.	.	.	.	.	.	.	5.02	.	.	.	.	.	.	.
BR-38	.	.	.	.	.	.	.	78.63	.	.	.	.	.	.	.
BR-39	.	.	.	.	.	.	.	74.64	.	.	.	.	.	.	.
OB-6BA	1.40	1.48	0.57	0.04	82.63	38	75	.	.	.	.	.	.	.	.
BR-35	.	.	.	.	.	.	.	81.27	.	.	.	.	.	.	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	NO PPM
BR-22
ML-5
BR-3
5
BR-82
BR-38
BR-39
OB-6BA
BR-35

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %	AL203 %
ML-7	OB-6B	BBS-1	34.443	76.943	6.50	7.00	20.0	2.61	6.95	.	0.22	0.61	0.35
OB-6BB	OB-6B	BBS-1	34.443	76.943	6.50	6.50	20.0	2.85	4.80	73.3	0.35	0.50	1.51
OB-6BC	OB-6B	BBS-1	34.443	76.943	7.00	7.00	20.0	2.54	4.73	74.9	0.36	0.53	1.43
BR-36	OB-6B	BBS-1	34.443	76.943	7.40	7.60	20.0	2.70	3.66	.	0.17	0.15	0.20
BR-83	OB-7	OLIG	33.855	77.611	4.00	5.00	26.7	0.72	7.45	.	0.30	0.65	0.34
BR-84	OB-8	PLEIS	33.853	77.656	2.00	4.00	23.0	0.68	6.59	.	0.40	0.80	0.32
OB-9A	OB-9	FPS-1	33.851	77.628	1.75	2.00	25.0	3.36	14.10	48.9	0.94	1.73	5.35
OB-9B	OB-9	FPS-1	33.851	77.628	2.75	3.00	25.0	3.20	12.40	45.7	2.12	1.79	5.52
BR-52	OB-9	FPS-1	33.851	77.628	3.00	3.10	25.0	3.55	11.56	.	1.45	0.86	1.76

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
ML-7	0.38	0.09	.	.	.	.	.	87.60	0.54	0.31	0.24	1.09	.	.	.
OB-6BB	0.60	0.52	0.25	1.24	85.96	14	35	.	.	.	.	.	0.22	197.62	29.61
OB-6BC	0.50	0.62	0.23	0.02	85.95	15	34	.	.	.	.	.	0.08	94.46	16.83
BR-36	.	.	.	.	.	.	.	85.92	.	.	.	.	.	.	.
BR-83	.	.	.	.	.	.	.	78.78	.	.	.	.	.	.	.
BR-84	.	.	.	.	.	.	.	82.20	.	.	.	.	.	.	.
OB-9A	1.50	1.61	0.79	0.03	78.35	97	88	.	.	.	.	.	.	.	.
OB-9B	2.50	1.38	0.65	0.02	75.32	84	119	.	.	.	.	.	0.46	244.00	78.17
BR-52	.	.	.	.	.	.	.	63.83	.	.	.	.	.	.	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-7	.	.	.	.	.	.	.	.	.	.	.
OB-6BB	23.68	0.47	0.01	4.33	3.00	10.46	78.48	10.23	267.22	52.88	10.51
OB-6BC	16.88	0.29	0.00	1.96	0.00	4.23	64.76	7.54	185.03	37.02	3.51
BR-36	.	.	.	.	.	.	.	.	.	.	.
BR-83	.	.	.	.	.	.	.	.	.	.	.
BR-84	.	.	.	.	.	.	.	.	.	.	.
OB-9A	.	.	.	.	.	.	.	.	.	.	.
OB-9B	65.38	1.56	0.02	10.00	2.88	9.73	55.40	31.78	479.17	70.10	24.52
BR-52	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP	BOT	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %	AL2O3 %
					DEPTH (M)	DEPTH (M)							
BR-85	OB-10	OLIG	33.855	77.641	1.00	.	25.0	0.76	16.20	.	0.58	0.71	0.46
ML-28	OB-11	FPS-1	33.868	77.578	0.75	1.50	25.0	14.23	27.75	.	0.84	0.88	1.03
BR-51	OB-11	FPS-1	33.868	77.578	0.90	1.00	25.0	15.93	26.99	.	0.85	0.54	1.11
15	OB-11	FPS-1	33.868	77.578	3.20	3.30	25.0	0.60	22.38	.	4.31	0.99	2.83
16	OB-12	OLIG	33.866	77.590	8.00	8.10	27.0	0.00	4.76	.	0.32	1.00	2.83
OB-14A	OB-14	FPS-1	33.861	77.565	1.00	1.25	28.0	5.41	23.50	24.9	1.31	1.00	2.89
OB-14A	OB-14	FPS-1	33.861	77.565	1.00	1.25	28.0	5.41	23.50	24.9	1.31	1.00	2.89
BR-47	OB-14	FPS-1	33.861	77.565	1.25	1.35	28.0	6.15	25.00	.	0.97	0.36	0.80
ML-16	OB-14	FPS-1	33.861	77.565	1.25	1.75	28.0	6.60	27.10	.	1.23	0.39	0.80

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
BR-85	.	.	.	.	.	.	.	62.92	.	.	.	.	.	.	.
ML-28	.	.	.	.	.	.	.	41.15	.	.	.	.	.	.	.
BR-51	.	.	.	.	.	.	.	37.76	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-14A	1.40	0.86	0.56	0.02	61.87	78	91	.	.	.	.	.	0.24	292.71	43.15
OB-14A	1.40	0.86	0.56	0.02	61.87	78	91	.	.	.	.	.	0.24	292.71	43.15
BR-47	.	.	.	.	.	.	.	43.67	.	.	.	.	.	.	.
ML-16	0.77	0.14	.	.	.	.	.	43.00	2.24	0.77	1.42	13.91	.	.	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-85	.	.	.	.	.	.	.	.	.	.	.
ML-28	.	.	.	.	.	.	.	.	.	.	.
BR-51	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.
OB-14A	25.38	0.69	0.01	17.21	3.50	5.76	308.95	14.97	794.80	100.05	20.44
OB-14A	25.38	0.69	0.01	17.21	3.50	5.76	308.95	14.97	794.80	100.05	20.44
BR-47	.	.	.	.	.	.	.	.	.	.	.
ML-16	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-14B	OB-14	FPS-1	33.861	77.565	2.50	2.75	28.0	11.70	29.80	23.2	1.16	0.95
BR-48	OB-14	FPS-1	33.861	77.565	3.00	3.10	28.0	11.65	21.42	.	0.72	0.54
ML-15	OB-14	FPS-1	33.861	77.565	3.25	3.75	28.0	14.30	30.92	.	1.35	0.41
OB-14C	OB-14	FPS-1	33.861	77.565	4.00	4.25	28.0	14.58	26.90	27.1	1.03	1.05
ML-29	OB-14	FPS-1	33.861	77.565	4.25	4.85	28.0	11.11	23.65	.	0.69	1.02
BR-49	OB-14	FPS-1	33.861	77.565	4.75	4.85	28.0	12.23	24.28	.	0.92	0.50
BR-50	OB-14	OLIG	33.861	77.565	5.90	6.00	28.0	0.60	18.87	.	1.95	0.46
BR-69	OB-15	OBS-U	33.713	77.603	0.90	1.00	29.0	1.66	12.17	.	2.25	1.00
8	OB-15	OBS-U	33.713	77.603	1.00	1.50	29.0	1.24	12.59	.	2.16	5.01

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-14B	2.54	1.60	0.60	0.49	0.86	72.95	36	116	.	.	.	.	.	0.32	743.09
BR-48	0.94	.	.	.	.	.	.	.	50.19	.	.	.	.	.	.
ML-15	1.17	0.85	0.16	.	.	.	.	.	35.00	2.74	1.38	1.36	7.58	.	.
OB-14C	2.48	1.50	0.68	0.58	0.03	75.96	45	153	.	.	.	.	.	.	.
ML-29	1.17	.	.	.	.	.	.	.	49.29	.	.	.	.	.	.
BR-49	0.89	.	.	.	.	.	.	.	43.30	.	.	.	.	.	.
BR-50	0.42	.	.	.	.	.	.	.	57.49	.	.	.	.	.	.
BR-69	0.99	.	.	.	.	.	.	.	62.17	.	.	.	.	.	.
8	5.67	.	.	.	.	.	.	.	.	.	.	.	.	.	.

SPL NUM	CR PPH	V PPM	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPM	Y PPM	MO PPH
OB-14B	52.10	20.96	0.79	0.01	26.14	12.03	5.67	200.11	11.75	1137.74	180.94	44.92
BR-48
ML-15
OB-14C
ML-29
BR-49
BR-50
BR-69
8

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %
9	OB-15	OBS-U	33.713	77.603	6.00	6.10	29.0	0.00	5.18	.	2.32	2.72
OB-16A	OB-16	OBS-U	33.685	77.623	0.50	0.75	28.0	0.88	4.90	37.90	4.86	4.78
BR-70	OB-16	OBS-U	33.685	77.623	1.10	1.25	28.0	1.02	4.90	.	3.55	1.54
14	OB-16	OBS-U	33.685	77.623	1.25	1.35	28.0	0.00	6.16	.	4.97	4.29
OB-16B	OB-16	OBS-U	33.685	77.623	4.25	4.50	28.0	0.84	2.09	45.30	3.32	5.00
OB-16C	OB-16	OBS-U	33.685	77.623	5.75	5.82	28.0	1.21	2.24	45.00	3.40	5.27
BR-66	OB-17	HOLD	33.706	77.570	0.40	0.50	27.0	1.01	12.14	.	0.62	0.78
BR-67	OB-17	OBS-U	33.706	77.570	3.00	3.10	27.0	2.07	12.22	.	3.25	1.32
OB-17A	OB-17	OBS-U	33.706	77.570	3.00	3.25	27.0	1.76	12.40	32.20	4.11	2.56

SPL NUM	AL2O3 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
9	7.18	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-16A	10.91	2.40	2.13	0.86	2.11	71.73	51	160	.	.	.	.	.	.	.
BR-70	1.94	.	.	.	.	.	.	.	64.91	.	.	.	.	.	.
14	9.63	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-16B	11.20	2.00	2.16	0.80	0.03	72.81	97	120	.	.	.	.	0.40	136.50	.
OB-16C	12.00	2.10	2.15	0.85	2.30	76.59	50	164	.	.	.	.	.	.	.
BR-66	0.17	.	.	.	.	.	.	.	70.79	.	.	.	.	.	.
BR-67	1.70	.	.	.	.	.	.	.	58.31	.	.	.	.	.	.
OB-17A	6.94	2.10	1.78	0.54	0.05	64.48	34	123	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
9
OB-16A
BR-70
14
OB-16B	95.75	65.53	3.69	0.01	1.07	0.48	12.42	353.99	92.53	92.53	193.09	57.70
OB-16C
BR-66
BR-67
OB-17A

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
10	OB-17		33.706	77.570	3.00	3.10	27.0	0.00	16.79	.	0.90	1.06
OB-17B	OB-17	OBS-U	33.706	77.570	5.75	6.00	27.0	1.22	13.50	40.00	2.33	2.20
11	OB-17	OBS-U	33.706	77.570	5.80	5.90	27.0	0.00	12.87	.	2.32	2.15
BR-68	OB-17	OBS-U	33.706	77.570	5.90	6.00	27.0	1.49	12.05	.	1.77	0.82
ML-30	OB-18	HOLO	33.728	77.671	0.00	1.00	24.5	6.08	24.97	.	0.81	1.44
BR-86	OB-18	HOLO	33.728	77.671	0.45	0.55	24.5	6.63	24.66	.	0.78	1.20
BR-87	OB-18	HOLO	33.728	77.671	1.00	1.10	24.5	3.46	21.66	.	0.87	1.30
BR-88	OB-19	HOLO	33.728	77.688	0.00	0.20	23.0	3.90	23.66	.	0.99	2.05
BR-63	OB-20	FPS-1	33.753	77.613	3.25	3.35	24.5	7.85	20.42	.	1.57	0.75

SPL NUM	AL203 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
10	1.13	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-17B	6.70	2.10	1.55	0.62	0.01	70.25	90	104	.	.	.	.	.	0.44	294.51
11	6.05	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-68	1.19	.	.	.	.	.	.	.	64.29	.	.	.	.	.	.
ML-30	0.42	.	.	.	.	.	.	.	50.67	.	.	.	.	.	.
BR-86	0.30	.	.	.	.	.	.	.	46.65	.	.	.	.	.	.
BR-87	0.36	.	.	.	.	.	.	.	51.88	.	.	.	.	.	.
BR-88	0.35	.	.	.	.	.	.	.	48.69	.	.	.	.	.	.
BR-63	1.51	.	.	.	.	.	.	.	46.59	.	.	.	.	.	.

SPL NUM	CR PPH	V PPM	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPM	Y PPM	HO PPH
10
OB-17B	59.21	55.06	2.04	0.02	12.69	1.23	14.22	364.66	36.80	425.25	57.60	18.82
11
BR-68
ML-30
BR-86
BR-87
BR-88
BR-63

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
BR-64	OB-20	FPS-1	33.753	77.613	4.90	5.00	24.5	10.55	28.21	.	1.32	0.54
7	OB-20	FPS-1	33.753	77.613	4.90	5.00	24.5	8.25	27.98	.	1.66	1.03
BR-65	OB-20	FPS-1	33.753	77.613	5.75	5.85	24.5	12.38	28.69	.	1.15	0.46
6	OB-20	FPS-1	33.753	77.613	5.75	5.85	24.5	9.85	26.58	.	1.19	0.86
BR-89	OB-21	OLIG	33.771	77.626	2.90	3.30	24.0	1.43	11.70	.	1.15	1.59
BR-90	OB-22	HOLO	33.763	77.625	0.00	0.30	26.0	4.82	36.41	.	0.44	1.07
OB-22A	OB-22	FPS-1	33.763	77.625	3.25	3.50	26.0	6.33	19.60	28.90	2.15	1.89
BR-61	OB-22	FPS-1	33.763	77.625	3.34	3.40	26.0	7.21	20.81	.	1.93	0.86
ML-18	OB-22	FPS-1	33.763	77.625	3.75	4.50	26.0	8.90	23.63	.	1.72	0.76

SPL NUM	AL203 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR-64	1.20	.	.	.	.	.	.	.	36.47	.	.	.	.	.	.
7	2.46	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-65	1.10	.	.	.	.	.	.	.	35.82	.	.	.	.	.	.
6	1.81	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-89	1.38	.	.	.	.	.	.	.	57.04	.	.	.	.	.	.
BR-90	0.24	.	.	.	.	.	.	.	27.98	.	.	.	.	.	.
OB-22A	4.56	1.60	0.12	0.51	0.04	65.71	40	124	.	.	.	.	.	.	.
BR-61	1.57	.	.	.	.	.	.	.	45.83	.	.	.	.	.	.
ML-18	1.80	0.87	0.37	.	.	.	.	.	43.40	3.64	0.90	1.46	7.79	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-64
7
BR-65
6
BR-89
BR-90
OB-22A
BR-61
ML-18

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
BR-62	OB-22	FPS-1	33.763	77.625	4.80	4.90	26.0	11.09	26.89	.	1.57	0.53
OB-22B	OB-22	FPS-1	33.763	77.625	5.25	5.50	26.0	2.31	25.60	25.40	1.42	1.97
BR-58	OB-23	HOLO	33.815	77.611	0.20	0.30	26.0	4.96	17.95	.	0.55	0.82
BR-59	OB-23	FPS-1	33.815	77.611	2.00	2.10	26.0	4.83	12.85	.	1.70	0.97
ML-34	OB-24	FPS-1	33.780	77.621	0.30	1.50	24.0	20.04	36.26	.	1.09	0.56
OB-24A	OB-24	PLEIS	33.780	77.621	0.30	0.50	24.0	9.26	33.40	20.30	1.23	0.99
ML-11	OB-24	FPS-1	33.780	77.621	0.75	1.50	24.0	22.90	39.96	.	1.09	0.46
BR-4	OB-24	FPS-1	33.780	77.621	0.80	0.85	24.0	21.69	39.47	.	0.92	0.50
OB-24B	OB-24	FPS-1	33.780	77.621	1.00	1.25	24.0	23.20	41.70	3.65	1.00	0.58

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR-62	1.15	.	.	.	.	.	.	.	37.10	.	.	.	.	.	.
OB-22B	3.62	1.30	0.83	0.40	1.44	64.29	24	49	.	.	.	.	.	0.29	146.19
BR-58	0.21	.	.	.	.	.	.	.	60.44	.	.	.	.	.	.
BR-59	2.01	.	.	.	.	.	.	.	58.31	.	.	.	.	.	.
ML-34	0.73	.	.	.	.	.	.	.	14.52	.	.	.	.	.	.
OB-24A	1.60	1.00	0.37	0.17	0.03	68.40	18	74	.	.	.	.	.	0.11	171.27
ML-11	0.48	0.90	0.14	.	.	.	.	.	13.80	3.34	2.27	1.13	7.68	.	.
BR-4	0.82	.	.	.	.	.	.	.	14.29	.	.	.	.	.	.
OB-24B	1.00	1.70	0.27	0.11	2.20	75.49	32	128	.	.	.	.	.	0.06	69.40

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-62	.	.	.	.	.	.	.	.	.	.	.	.
OB-22B	77.01	27.46	1.13	0.01	17.95	7.03	9.11	278.83	19.72	1050.39	185.09	16.18
BR-58	.	.	.	.	.	.	.	.	.	.	.	.
BR-59	.	.	.	.	.	.	.	.	.	.	.	.
ML-34	.	.	.	.	.	.	.	.	.	.	.	.
OB-24A	53.97	33.89	0.84	0.01	29.04	10.54	1.03	132.21	4.46	1245.22	107.13	3.46
ML-11	.	.	.	.	.	.	.	.	.	.	.	.
BR-4	.	.	.	.	.	.	.	.	.	.	.	.
OB-24B	55.35	31.90	0.40	0.00	29.64	21.97	2.98	7.77	1.56	1839.06	188.17	7.50

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %
BR102	OB-24	FPS-1	33.780	77.621	1.50	1.67	24.0	20.96	36.17	.	0.77	0.93
12	OB-24	OLIG	33.780	77.621	2.00	2.10	24.0	0.00	34.96	.	2.16	0.64
BR-5	OB-24	OLIG	33.780	77.621	2.50	2.55	24.0	1.04	30.08	.	2.49	0.50
13	OB-24	OLIG	33.780	77.621	7.70	7.80	24.0	0.00	29.38	.	3.98	1.02
ML-35	OB-25	HOLO	33.846	77.585	0.00	1.20	25.0	8.46	25.48	.	0.90	0.68
BR-53	OB-25	HOLO	33.846	77.585	0.45	0.55	25.0	10.81	26.33	.	0.75	0.68
OB-26A	OB-26	FPS-1	33.843	77.560	0.25	0.50	28.0	8.89	23.50	34.5	1.59	1.30
BR-54	OB-26	FPS-1	33.843	77.560	0.50	0.60	28.0	8.39	21.57	.	1.27	0.64
OB-26B	OB-26	FPS-1	33.843	77.560	1.25	1.50	28.0	10.18	28.20	22.4	1.44	1.04

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	C02 %	TI %	ZR PPM
BR102	0.80	.	.	.	.	.	.	.	21.95	.	.	.	.	.	.
12	2.08	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-5	0.64	.	.	.	.	.	.	.	34.00	.	.	.	.	.	.
13	2.83	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-35	0.39	.	.	.	.	.	.	.	46.40	.	.	.	.	.	.
BR-53	0.26	.	.	.	.	.	.	.	42.85	.	.	.	.	.	.
OB-26A	3.58	1.90	0.86	0.67	1.08	77.89	43	122	.	.	.	.	.	0.28	553.31
BR-54	1.37	.	.	.	.	.	.	.	46.77	.	.	.	.	.	.
OB-26B	2.89	1.60	0.80	0.47	0.03	69.05	36	116	.	.	.	.	.	0.23	201.72

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR102	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.
BR-5	.	.	.	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.
ML-35	.	.	.	.	.	.	.	.	.	.	.	.
BR-53	.	.	.	.	.	.	.	.	.	.	.	.
OB-26A	73.07	36.56	0.96	0.01	16.37	6.48	2.09	26.82	17.69	833.75	137.57	32.24
BR-54	.	.	.	.	.	.	.	.	.	.	.	.
OB-26B	74.70	25.96	0.67	0.01	22.52	11.48	5.44	224.64	10.26	1293.07	191.18	14.58

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %
OB-26B	OB-26	FPS-1	33.843	77.560	1.25	1.50	28.0	10.18	28.20	22.40	1.44	1.04
ML-13	OB-26	FPS-1	33.843	77.560	1.75	2.50	28.0	15.10	33.36	.	1.45	0.40
BR-55	OB-26	FPS-1	33.843	77.560	2.00	2.10	28.0	15.71	33.34	.	1.22	0.50
2	OB-26	FPS-1	33.843	77.560	2.00	2.10	28.0	15.58	31.48	.	1.36	0.86
OB-26C	OB-26	FPS-1	33.843	77.560	2.75	3.00	28.0	12.90	29.90	17.10	1.31	0.85
ML-26	OB-26	FPS-1	33.843	77.560	3.25	4.25	28.0	13.32	27.20	.	0.84	0.65
BR-56	OB-26	FPS-1	33.843	77.560	4.00	4.10	28.0	12.16	22.60	.	0.85	0.54
3	OB-26		33.843	77.560	4.00	4.10	28.0	14.43	24.48	.	0.96	0.87
BR-91	OB-27	H0LO	33.841	77.533	0.00	0.30	29.0	1.00	9.55	.	0.45	0.36

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-26B	2.89	1.60	0.80	0.47	0.03	69.05	36	116	.	.	.	.	.	0.25	296.39
ML-13	1.15	0.89	0.20	.	.	.	.	.	27.60	3.11	1.57	1.46	9.71	.	.
BR-55	1.19	.	.	.	.	.	.	.	26.58	.	.	.	.	.	.
2	2.08	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-26C	2.20	1.47	0.47	0.39	0.01	66.60	63	124	.	.	.	.	.	.	.
ML-26	0.95	.	.	.	.	.	.	.	43.38	.	.	.	.	.	.
BR-56	1.09	.	.	.	.	.	.	.	47.27	.	.	.	.	.	.
3	2.08	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-91	0.14	.	.	.	.	.	.	.	76.82	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	HO PPM
OB-26B	66.05	42.00	0.82	0.01	23.81	9.94	0.73	252.26	13.30	1057.33	148.48	15.97
ML-13
BR-55
2
OB-26C
ML-26
BR-56
3
BR-91

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
BR-92	OB-27	FPS-2	33.841	77.533	1.00	1.30	29.0	0.80	2.47	.	1.70	2.62
OB-27A	OB-27	FPS-2	33.841	77.533	1.25	1.50	29.0	0.61	16.20	44.70	2.67	4.34
BR-57	OB-27	FPS-2	33.841	77.533	5.90	6.00	29.0	2.62	15.78	.	1.07	0.61
HL-17	OB-27	FPS-2	33.841	77.533	6.25	7.00	29.0	3.10	15.64	.	1.50	0.57
OB-27B	OB-27	FPS-2	33.841	77.533	7.25	7.50	29.0	5.93	13.80	45.20	2.32	1.60
OB-28A	OB-28	FPS-2	33.831	77.528	1.00	1.25	30.0	0.96	4.03	47.40	3.44	3.36
BR-93	OB-28	FPS-2	33.831	77.528	2.00	2.30	30.0	0.72	2.48	.	1.70	2.64
OB-28B	OB-28	FPS-2	33.831	77.528	2.00	2.27	30.0	0.63	3.75	48.80	2.70	4.39
OB-28C	OB-28	FPS-2	33.831	77.528	3.00	3.25	30.0	0.77	3.50	44.70	2.95	5.56

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR-92	1.46	.	.	.	.	.	.	.	73.82	.	.	.	.	.	.
OB-27A	10.10	2.10	2.65	0.89	0.03	84.36	109	120	.	.	.	.	.	0.50	294.09
BR-57	1.04	.	.	.	.	.	.	.	60.21	.	.	.	.	.	.
HL-17	1.32	0.78	0.44	.	.	.	.	.	62.60	2.62	0.40	1.46	8.15	.	.
OB-27B	4.28	1.60	0.93	0.56	0.02	76.26	86	100	.	.	.	.	.	0.47	603.17
OB-28A	9.61	2.60	2.43	0.74	0.02	74.68	97	122	.	.	.	.	.	0.64	186.40
BR-93	1.49	.	.	.	.	.	.	.	73.38	.	.	.	.	.	.
OB-28B	10.40	2.10	2.68	0.91	0.03	76.44	111	124	.	.	.	.	.	0.79	211.54
OB-28C	12.70	2.40	2.70	1.02	2.44	78.74	60	158	.	.	.	.	.	0.60	282.79

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-92	.	.	.	.	.	.	.	.	.	.	.	.
OB-27A	75.14	55.88	3.36	0.01	1.09	0.39	28.27	200.87	76.63	174.91	65.40	20.53
BR-57	.	.	.	.	.	.	.	.	.	.	.	.
HL-17	.	.	.	.	.	.	.	.	.	.	.	.
OB-27B	89.85	51.68	1.83	0.02	13.53	3.38	11.04	336.85	33.33	557.68	64.17	43.35
OB-28A	117.88	65.37	3.58	0.02	4.74	1.33	13.94	508.64	.	281.90	49.42	14.62
BR-93	.	.	.	.	.	.	.	.	.	.	.	.
OB-28B	103.08	97.12	4.20	0.02	3.84	1.01	19.33	26.54	74.73	251.43	53.45	15.00
OB-28C	110.20	104.59	4.55	0.02	2.60	0.50	6.48	320.51	87.30	259.87	54.15	18.01

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %
ML-1	OB-29	HOLO	33.873	77.535	0.01	0.01	26.5	17.80	31.62	.	0.57	0.81
ML-14	OB-29	FPS-2	33.873	77.535	3.75	4.25	26.5	3.00	14.25	.	1.13	0.46
OB-29BA	OB-29B	HOLO	33.873	77.535	0.25	0.50	26.5	0.77	21.90	41.50	0.77	0.34
BR-43	OB-29B	PLEIS	33.873	77.535	1.40	1.50	26.5	2.78	11.34	.	1.07	0.64
OB-29BB	OB-29B	FPS-2	33.873	77.535	3.00	3.25	26.5	3.42	.	.	1.49	1.51
BR-44	OB-29B	FPS-2	33.873	77.535	4.40	4.50	26.5	3.59	13.62	.	0.87	0.46
BR-45	OB-29B	FPS-2	33.873	77.535	5.90	6.00	26.5	6.29	26.12	.	0.82	0.39
OB-29BC	OB-29B	FPS-1	33.873	77.535	6.00	6.25	26.5	6.94	27.00	25.70	1.07	0.98
BR-46	OB-29B	FPS-2	33.873	77.535	7.10	7.20	26.5	10.76	28.63	.	0.95	0.46

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
ML-1	0.43	0.84	0.11	.	.	.	.	.	33.50	2.08	2.10	0.57	5.29	.	.
ML-14	0.81	0.65	0.13	.	.	.	.	.	67.00	1.92	0.40	1.21	7.42	.	.
OB-29BA	8.50	0.30	0.29	0.03	0.96	67.75	4	9	.	.	.	.	.	.	.
BR-43	11.18	.	.	.	.	.	.	.	63.98	.	.	.	.	.	.
OB-29BB	4.41	1.30	1.26	0.95	0.03	.	116	106	.	.	.	.	.	.	.
BR-44	0.85	.	.	.	.	.	.	.	65.20	.	.	.	.	.	.
BR-45	0.80	.	.	.	.	.	.	.	42.05	.	.	.	.	.	.
OB-29BC	2.72	1.20	0.84	0.53	0.03	67.07	38	104	.	.	.	.	.	.	.
BR-46	0.94	.	.	.	.	.	.	.	37.05	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-1
ML-14
OB-29BA
BR-43
OB-29BB
BR-44
BR-45
OB-29BC
BR-46

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
ML-27	OB-30	FPS-1	33.916	77.503	1.25	2.00	26.0	13.11	25.33	.	0.86	0.83
BR-42	OB-30	FPS-1	33.916	77.503	1.50	1.60	26.0	14.25	24.92	.	0.90	0.53
4	OB-30	FPS-1	33.916	77.503	1.50	1.60	26.0	13.06	25.74	.	1.13	0.84
OB-33A	OB-33	OBS-4	34.618	76.936	0.50	0.75	16.0	0.21	52.20	0.00	1.66	0.30
BR-94	OB-33	OBS-4	34.618	76.936	1.80	2.30	16.0	0.21	52.25	.	1.12	0.28
21	OB-33	OBS-4	34.618	76.936	2.50	2.60	16.0	0.00	54.56	.	0.86	0.17
OB-33B	OB-33	OBS-4	34.618	76.936	4.50	4.75	16.0	0.27	49.70	0.00	3.41	0.45
OB-33C	OB-33	OBS-3	34.618	76.936	6.50	6.75	16.0	0.91	.	.	1.87	1.18
BR-37	OB-33	OBS-3	34.618	76.936	8.25	8.50	16.0	1.35	34.94	.	1.30	0.93

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
ML-27	0.92	.	.	.	.	.	.	.	42.41	.	.	.	.	.	.
BR-42	0.99	.	.	.	.	.	.	.	42.55	.	.	.	.	.	.
4	2.27	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-33A	0.32	0.60	0.03	0.02	0.29	55.64	7	18	.	.	.	.	0.00	26.99	
BR-94	0.09	.	.	.	.	.	.	.	2.19	.	.	.	.	.	.
21	0.15	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-33B	0.54	0.60	0.21	0.03	1.79	57.06	18	19	.	.	.	.	0.00	22.91	
OB-33C	1.77	0.90	0.42	0.13	0.02	.	13	50	.	.	.	.	0.05	35.87	
BR-37	1.30	.	.	.	.	.	.	.	23.93	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-27	.	.	.	.	.	.	.	.	.	.	.	.
BR-42	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.
OB-33A	4.56	0.00	0.22	0.00	44.65	0.43	2.22	11.02	0.42	1108.82	7.33	1.29
BR-94	.	.	.	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.	.	.	.
OB-33B	12.75	0.21	0.33	0.00	49.67	0.40	9.58	15.91	29.49	523.24	87.06	25.46
OB-33C	25.92	5.21	0.79	0.00	29.99	0.55	1.43	219.18	9.46	940.72	17.44	4.63
BR-37	.	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %
OB-33D	OB-33	OBS-3	34.618	76.936	8.25	8.50	16.0	1.00	38.20	9.26	1.49	1.46
22	OB-33	OBS-3	34.618	76.936	8.25	8.50	16.0	0.00	36.37	.	1.82	1.86
OB-34A	OB-34	OBS-1	34.610	76.970	3.75	4.00	15.5	1.09	16.50	40.20	2.77	1.43
19	OB-34	OBS-1	34.610	76.970	4.00	4.10	15.5	0.00	15.39	.	2.98	1.39
OB-34B	OB-34	OBS-1	34.610	76.970	5.75	6.00	15.5	1.08	12.40	51.60	2.93	1.62
OB-34C	OB-34	OBS-1	34.610	76.970	6.75	7.00	15.5	1.00	11.40	48.40	2.39	1.47
BR-30	OB-34	OBS-1	34.610	76.970	8.00	8.25	15.5	1.19	21.78	.	2.15	0.43
20	OB-34	OBS-1	34.610	76.970	8.00	8.25	15.5	0.00	23.78	.	2.32	0.64
OB-35A	OB-35	OBS-1	34.608	77.011	0.90	1.15	15.0	0.76	.	.	1.87	0.98

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-33D	2.51	1.10	0.25	0.19	0.01	55.52	19	95	.	.	.	.	.	0.10	49.92
22	3.40	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-34A	2.47	0.80	0.40	0.17	0.01	65.85	28	58	.	.	.	.	.	0.10	37.70
19	2.65	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-34B	3.37	0.80	0.73	0.23	0.01	74.86	39	74	.	.	.	.	.	0.16	100.03
OB-34C	3.23	0.80	0.52	0.22	0.02	69.54	18	72	.	.	.	.	.	.	.
BR-30	0.47	.	.	.	.	.	.	.	50.24	.	.	.	.	.	.
20	1.34	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OB-35A	1.17	0.60	0.30	0.14	0.02	.	14	43	.	.	.	.	.	0.00	25.99

SPL NUM	CR PPH	V PPH	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPH	Y PPH	MO PPH
OB-33D	38.70	11.65	1.33	0.01	35.96	0.91	8.88	306.06	17.32	818.34	24.27	2.97
22	.	.	.	.	.	.	.	.	.	.	.	.
OB-34A	49.77	23.00	1.30	0.01	12.42	0.68	7.88	277.24	18.64	365.65	25.32	1.98
19	.	.	.	.	.	.	.	.	.	.	.	.
OB-34B	76.06	30.94	1.52	0.01	11.33	1.26	7.72	166.25	23.15	275.71	22.91	5.41
OB-34C	.	.	.	.	.	.	.	.	.	.	.	.
BR-30	.	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.	.	.	.
OB-35A	5.86	0.00	0.24	0.00	48.00	0.26	1.95	6.46	0.00	1063.47	3.68	1.25

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	HGO %	FE2O3 %
OB-35B	OB-35	OBS-1	34.608	77.011	1.75	2.00	15.0	1.23	27.20	14.8	6.25	1.56
OB-35C	OB-35	OBS-1	34.608	77.011	3.75	4.00	15.0	1.08	26.60	17.7	5.05	1.27
OB-35D	OB-35	OBS-1	34.608	77.011	5.75	6.00	15.0	1.08	28.30	24.5	4.23	0.98
OB-35E	OB-35	OBS-1	34.608	77.011	7.20	7.50	15.0	1.10	28.30	19.8	3.26	0.84
ML-6	OB-36	BBS-1	34.626	76.915	2.25	2.75	15.5	2.51	5.21	.	0.43	0.96
17	OB-36	BBS-1	34.626	76.915	2.90	3.00	15.5	2.52	4.20	.	0.70	1.27
BR-6	OB-36	BBS-1	34.626	76.915	3.25	3.50	15.5	2.02	3.69	.	0.65	0.79
BR-7	OB-36	OBS-4	34.626	76.915	5.25	5.39	15.5	0.42	37.09	.	8.84	0.46
18	OB-36	OBS-4	34.626	76.915	5.25	5.35	15.5	0.00	39.17	.	8.46	0.56

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-35B	3.07	0.80	0.67	0.27	0.02	55.95	45	65	.	.	.	.	.	.	.
OB-35C	2.48	0.50	0.60	0.25	0.01	55.61	44	65	.	.	.	.	.	0.19	86.62
OB-35D	2.09	0.50	0.15	0.22	0.01	62.14	20	57	.	.	.	.	.	0.15	138.31
OB-35E	2.00	0.40	0.48	0.22	0.02	56.46	15	64	.	.	.	.	.	.	.
ML-6	1.00	0.27	0.14	.	.	.	.	.	85.50	1.57	0.32	0.73	0.52	.	.
17	3.02	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR-6	1.08	.	.	.	.	.	.	.	81.63	.	.	.	.	.	.
BR-7	0.66	.	.	.	.	.	.	.	9.80	.	.	.	.	.	.
18	1.32	.	.	.	.	.	.	.	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-35B	.	.	.	.	.	.	.	.	.	.	.	.
OB-35C	59.24	28.35	1.18	0.01	26.65	1.21	7.91	13.46	14.16	406.97	23.77	4.22
OB-35D	47.80	19.37	0.89	0.01	27.98	0.99	4.99	118.14	13.50	462.85	20.16	8.75
OB-35E	.	.	.	.	.	.	.	.	.	.	.	.
ML-6	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.
BR-6	.	.	.	.	.	.	.	.	.	.	.	.
BR-7	.	.	.	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-37A	OB-37	FPS-5	34.593	77.078	1.50	1.75	15.5	0.51	3.45	80.8	0.51	0.97
OB-37B	OB-37	FPS-5	34.593	77.078	4.75	5.00	15.5	0.72	1.94	73.3	0.33	0.80
OB-37C	OB-37	FPS-4	34.593	77.078	8.00	8.25	15.5	0.57	20.70	50.2	0.15	0.32
OB-37C	OB-37	FPS-4	34.593	77.078	8.00	8.25	15.5	0.57	20.70	50.2	0.15	0.32
OB-38A	OB-38	OBS-2	34.436	77.008	0.25	0.50	21.0	1.93	38.50	13.7	0.98	1.83
OB-38A	OB-38	OBS-2	34.436	77.008	0.25	0.50	21.0	1.93	38.50	13.7	0.98	1.83
BR-95	OB-38	OBS-2	34.436	77.008	1.00	2.00	21.0	1.35	1.69	.	0.64	1.38
OB-38B	OB-38	OBS-2	34.436	77.008	1.50	1.80	21.0	3.33	28.40	28.2	1.08	2.74
OB-38C	OB-38	OBS-1	34.436	77.008	2.25	2.50	21.0	1.42	13.50	40.1	3.93	0.42

SPL NUM	AL203 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-37A	2.73	0.70	0.91	0.86	0.03	91.51	95	34	.	.	.	.	.	0.65	580.00
OB-37B	2.37	0.60	0.71	0.70	0.02	81.53	80	29	.	.	.	.	.	0.45	400.68
OB-37C	0.98	0.40	0.40	0.17	0.03	74.01	11	20	.	.	.	.	.	0.08	80.09
OB-37C	0.98	0.40	0.40	0.17	0.03	74.01	11	20	.	.	.	.	.	0.07	284.20
OB-38A	0.55	0.60	0.50	0.04	0.02	58.71	8	35	.	.	.	.	.	0.00	15.93
OB-38A	0.55	0.60	0.50	0.04	0.02	58.71	8	35	.	.	.	.	.	0.00	23.00
BR-95	1.09	.	.	.	.	.	.	.	82.87	.	.	.	.	.	.
OB-38B	1.80	1.00	0.40	0.29	0.02	67.29	28	45	.	.	.	.	.	0.12	303.21
OB-38C	1.05	0.50	0.32	0.18	0.02	61.49	11	28	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-37A	17.14	45.03	0.86	0.02	2.81	1.05	13.04	9.07	19.07	160.18	17.82	32.52
OB-37B	9.35	37.41	0.68	0.01	1.72	0.95	8.30	32.04	17.80	105.17	18.25	20.40
OB-37C	6.27	11.88	0.20	0.01	13.80	0.58	1.06	42.73	5.79	738.21	6.13	1.60
OB-37C	5.44	10.01	0.17	0.00	14.80	0.52	1.13	42.77	7.20	796.89	7.64	13.45
OB-38A	69.60	0.00	1.36	0.00	32.09	1.33	2.60	125.47	9.75	916.30	33.55	3.91
OB-38A	64.84	0.00	1.32	0.00	29.56	1.26	3.44	122.68	10.47	946.54	32.17	3.02
BR-95	.	.	.	.	.	.	.	.	.	.	.	.
OB-38B	54.48	22.98	1.97	0.01	18.62	2.32	14.54	275.43	16.43	861.55	49.96	28.32
OB-38C	.	.	.	.	.	.	.	.	.	.	.	.

OS

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-38D	OB-38	OBS-1	34.436	77.008	3.75	4.00	21.0	1.61	9.10	53.5	4.08	0.58
BR-33	OB-38	OBS-1	34.436	77.008	5.75	6.00	21.0	1.84	3.66	.	1.79	0.12
OB-38E	OB-38	OBS-1	34.436	77.008	5.75	6.00	21.0	1.68	5.39	74.9	2.19	0.30
OB-38F	OB-38	OBS-1	34.436	77.008	8.46	8.46	21.0	1.70	8.44	55.1	4.89	0.91
BR-34	OB-38	OBS-1	34.436	77.008	8.80	9.10	21.0	1.98	1.83	.	0.21	0.06
ML-9	OB-39	BBS-1	34.440	76.975	6.75	7.25	23.0	2.00	4.86	.	0.87	1.41
BR-11	OB-39	OBS-2	34.440	76.975	8.00	8.25	23.0	2.79	3.81	.	0.67	0.86
BR-12	OB-39	OBS-2	34.440	76.975	8.50	8.75	23.0	3.11	26.93	.	0.75	0.86
OB-39A	OB-39	OBS-2	34.440	76.975	8.75	9.00	23.0	2.93	31.20	24.3	0.97	1.58

SPL NUM	AL203 %	NA20 %	K20 %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPH
OB-38D	1.73	0.70	0.55	0.19	0.02	72.11	12	40	.	.	.	.	.	0.13	65.33
BR-33	0.21	.	.	.	.	.	.	.	82.64	.	.	.	.	.	.
OB-38E	1.19	0.40	0.49	0.17	0.01	86.74	24	21	.	.	.	.	.	0.11	95.35
OB-38F	2.53	1.20	0.56	0.22	0.02	75.60	16	62	.	.	.	.	.	.	.
BR-34	0.10	.	.	.	.	.	.	.	88.14	.	.	.	.	.	.
ML-9	1.56	0.66	0.44	.	.	.	.	.	82.00	2.16	0.24	0.92	0.52	.	.
BR-11	1.32	.	.	.	.	.	.	.	82.25	.	.	.	.	.	.
BR-12	0.53	.	.	.	.	.	.	.	43.06	.	.	.	.	.	.
OB-39A	0.79	0.40	0.20	0.06	0.01	62.50	2	31	.	.	.	.	.	0.02	36.97

SPL NUM	CR PPH	V PPM	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPM	Y PPM	MO PPH
OB-38D	34.26	18.51	0.56	0.01	7.26	1.24	9.93	170.24	11.43	207.18	32.18	4.88
BR-33	.	.	.	.	.	.	.	.	.	.	.	.
OB-38E	11.88	9.49	0.23	0.00	3.34	1.36	7.56	18.39	7.93	181.73	33.07	3.84
OB-38F	.	.	.	.	.	.	.	.	.	.	.	.
BR-34	.	.	.	.	.	.	.	.	.	.	.	.
ML-9	.	.	.	.	.	.	.	.	.	.	.	.
BR-11	.	.	.	.	.	.	.	.	.	.	.	.
BR-12	.	.	.	.	.	.	.	.	.	.	.	.
OB-39A	84.90	11.57	1.41	0.00	33.31	4.00	7.49	53.59	9.84	860.20	32.31	3.38

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
BR-20	OB-41	OBS-1	34.358	76.996	4.30	4.50	26.0	1.71	5.09	.	0.35	0.43
OB-42A	OB-42	BBS-1	34.355	76.953	5.25	5.50	25.0	1.83	3.61	62.6	1.26	2.40
BR-41	OB-42	BBS-1	34.355	76.953	5.80	6.00	25.0	2.24	1.16	.	0.75	1.10
OB-42B	OB-42	BBS-1	34.355	76.953	6.25	6.50	25.0	1.61	2.45	61.5	1.56	2.91
HL-33	OB-43	HOLO	34.353	76.958	0.00	.	25.0	5.69	29.62	.	1.28	2.33
OB-43A	OB-43	BBS-1	34.353	76.958	1.00	1.25	25.0	1.98	4.76	58.9	1.66	2.79
OB-43B	OB-43	BBS-1	34.353	76.958	2.00	2.25	25.0	2.06	3.31	56.2	0.15	0.32
BR-40	OB-43	BBS-1	34.353	76.958	2.80	3.00	25.0	1.74	0.67	.	1.00	1.75
OB-43C	OB-43	BBS-1	34.353	76.958	3.50	3.75	25.0	1.19	1.69	53.5	2.01	3.88

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR-20	0.18	.	.	.	.	.	.	.	84.26	.	.	.	.	.	.
OB-42A	5.70	1.2	1.42	0.94	0.04	81.09	112	109	.	.	.	.	.	0.76	730.48
BR-41	1.08	.	.	.	.	.	.	.	81.86	.	.	.	.	.	.
OB-42B	7.54	1.8	1.52	0.81	1.84	83.61	49	113	.	.	.	.	.	0.55	351.13
HL-33	0.37	.	.	.	.	.	.	.	40.99	.	.	.	.	.	.
OB-43A	6.20	1.5	1.50	0.96	0.04	80.36	115	122	.	.	.	.	.	0.57	393.08
OB-43B	0.95	0.4	0.36	0.18	0.03	64.05	11	18	.	.	.	.	.	.	.
BR-40	2.16	.	.	.	.	.	.	.	79.80	.	.	.	.	.	.
OB-43C	9.96	2.4	1.86	0.98	2.15	79.63	64	142	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-20	.	.	.	.	.	.	.	.	.	.	.	.
OB-42A	51.89	52.38	2.24	0.03	3.27	2.47	14.60	19.69	35.89	240.21	67.16	41.54
BR-41	.	.	.	.	.	.	.	.	.	.	.	.
OB-42B	77.27	47.65	2.69	0.02	2.39	2.09	6.22	261.55	50.93	204.04	54.01	22.16
HL-33	.	.	.	.	.	.	.	.	.	.	.	.
OB-43A	52.97	50.41	2.31	0.02	4.10	1.79	14.26	61.27	41.65	301.96	60.90	25.92
OB-43B
BR-40
OB-43C

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CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-43D	OB-43	BBS-1	34.353	76.958	4.25	4.50	25.0	0.99	1.54	52.1	1.79	3.34
OB-45A	OB-45	FPS-6	34.346	77.055	0.75	1.00	24.0	1.24	38.20	10.4	2.80	0.80
OB-45A	OB-45	FPS-6	34.346	77.055	0.75	1.00	24.0	1.24	38.20	10.4	2.80	0.80
OB-45B	OB-45	FPS-6	34.346	77.055	3.00	3.25	24.0	2.19	18.60	50.7	1.16	0.66
OB-45C	OB-45	FPS-6	34.346	77.055	4.75	5.00	24.0	2.75	14.00	65.8	0.50	0.54
BR-9	OB-46	FPS-5	34.341	77.081	7.30	7.50	24.0	1.72	3.50	.	0.30	0.43
BR-10	OB-46	FPS-5	34.341	77.081	8.90	9.10	24.0	1.67	5.64	.	0.35	0.39
OB-47A	OB-47	FPS-2	34.075	77.295	0.00	0.25	27.0	0.79	3.61	59.9	2.54	1.99
OB-47B	OB-47	FPS-2	34.075	77.295	2.00	2.25	27.0	0.74	6.90	56.7	4.37	1.61

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-43D	8.99	1.8	1.73	0.76	0.03	73.10	111	118	.	.	.	.	.	.	.
OB-45A	1.14	0.7	0.31	0.13	0.02	55.82	12	34	.	.	.	.	.	0.06	31.36
OB-45A	1.14	0.7	0.31	0.13	0.02	55.82	12	34	.	.	.	.	.	0.07	88.01
OB-45B	1.46	0.6	0.49	0.21	0.02	76.16	15	38	.	.	.	.	.	0.07	122.47
OB-45C	1.14	0.5	0.47	0.14	0.01	85.86	26	29	.	.	.	.	.	0.07	128.00
BR-9	0.38	.	.	.	.	.	.	.	84.52	.	.	.	.	.	.
BR-10	0.33	.	.	.	.	.	.	.	73.01	.	.	.	.	.	.
OB-47A	4.37	1.4	1.24	0.71	0.04	76.64	36	87	.	.	.	.	.	0.50	446.56
OB-47B	3.84	1.1	1.16	0.70	0.03	77.18	86	69	.	.	.	.	.	0.35	772.09

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-43D	.	.	.	.	.	.	.	.	.	.	.	.
OB-45A	35.40	8.83	0.75	0.01	40.81	1.79	0.97	159.31	5.99	662.97	15.58	3.18
OB-45A	28.23	6.30	0.65	0.01	32.80	1.10	2.25	149.88	7.90	677.89	17.72	5.98
OB-45B	35.97	14.78	0.54	0.00	15.67	2.15	4.43	140.38	10.99	423.64	38.87	4.13
OB-45C	27.64	10.88	0.44	0.00	11.49	3.04	7.19	69.95	7.07	452.91	34.74	6.85
BR-9	.	.	.	.	.	.	.	.	.	.	.	.
BR-10	.	.	.	.	.	.	.	.	.	.	.	.
OB-47A	56.99	39.62	1.78	0.01	2.66	0.46	5.72	287.23	34.98	140.08	34.59	20.51
OB-47B	33.36	36.89	1.16	0.01	3.67	0.52	5.31	189.67	26.48	145.07	31.51	41.58

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-47C	OB-47	FPS-2	34.075	77.295	4.25	4.50	27.0	0.90	4.06	57.2	2.66	1.74
BR-46	OB-47	FPS-2	34.075	77.295	4.30	4.50	27.0	0.96	4.02	.	2.40	0.71
OB-47D	OB-47	FPS-2	34.075	77.295	5.50	5.75	27.0	1.12	3.12	65.3	1.65	1.78
OB-47E	OB-47	FPS-1	34.075	77.295	7.50	7.75	27.0	1.43	5.81	52.0	3.41	2.50
OB-47F	OB-47	FPS-1	34.075	77.295	8.50	8.75	27.0	2.95	9.38	49.5	4.26	1.82
BR-27	OB-47	FPS-1	34.075	77.295	8.75	9.13	27.0	3.16	8.66	.	3.25	0.64
OB-48A	OB-48	FPS-3	34.156	77.220	0.75	1.00	27.5	1.24	.	.	1.17	1.15
OB-48B	OB-48	FPS-3	34.156	77.220	2.25	2.50	27.5	0.90	6.34	66.3	0.61	0.87
OB-48C	OB-48	FPS-3	34.156	77.220	4.75	5.00	27.5	0.74	7.63	68.5	0.62	1.02

SPL NUM	AL203 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-47C	4.12	1.30	1.31	0.56	0.04	73.97	27	89	.	.	.	.	.	0.34	216.05
BR-46	1.13	.	.	.	.	.	.	.	75.13	.	.	.	.	.	.
OB-47D	4.37	1.40	1.31	0.72	0.04	80.90	40	99	.	.	.	.	.	.	.
OB-47E	5.88	1.60	1.97	0.71	0.04	75.36	42	143	.	.	.	.	.	0.51	211.01
OB-47F	4.36	1.00	1.46	0.85	0.03	75.63	105	106	.	.	.	.	.	0.65	493.98
BR-27	1.04	.	.	.	.	.	.	.	67.19	.	.	.	.	.	.
OB-48A	2.19	0.70	0.76	1.16	0.04	.	55	53	.	.	.	.	.	.	.
OB-48B	1.95	0.80	0.73	0.89	0.03	79.43	42	37	.	.	.	.	.	.	.
OB-48C	1.85	0.60	0.61	0.89	0.04	82.59	44	36	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-47C	52.09	46.00	1.58	0.01	2.69	0.53	12.04	319.08	31.75	139.00	28.40	10.23
BR-46	.	.	.	.	.	.	.	.	.	.	.	.
OB-47D	.	.	.	.	.	.	.	.	.	.	.	.
OB-47E	87.12	57.18	2.21	0.01	4.97	1.34	3.60	290.15	43.69	199.27	39.43	10.12
OB-47F	86.55	33.29	1.58	0.02	8.65	3.91	9.99	169.06	28.58	297.78	67.17	28.84
BR-27	.	.	.	.	.	.	.	.	.	.	.	.
OB-48A	.	.	.	.	.	.	.	.	.	.	.	.
OB-48B	.	.	.	.	.	.	.	.	.	.	.	.
OB-48C	.	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
BR-31	OB-48	FPS-3	34.156	77.220	5.80	6.00	27.5	0.72	1.83	.	0.25	0.29
OB-48D	OB-48	FPS-3	34.156	77.220	6.75	7.00	27.5	0.75	1.51	76.0	0.46	1.24
OB-49A	OB-49	FPS-2	34.161	77.258	1.00	1.25	25.0	0.84	7.91	61.5	3.59	1.21
OB-49B	OB-49	FPS-2	34.161	77.258	4.25	4.50	25.0	0.74	5.04	70.1	2.46	1.00
OB-49C	OB-49	FPS-2	34.161	77.258	8.75	9.00	25.0	0.99	3.50	73.8	1.52	1.27
BR-96	OB-50	FPS-6	34.158	77.141	1.00	1.50	20.5	1.34	8.35	.	1.20	0.54
OB-50A	OB-50	FPS-6	34.158	77.141	1.00	1.25	20.5	1.56	7.98	65.8	1.34	0.83
BR-97	OB-50	FPS-5	34.158	77.141	2.00	3.00	20.5	2.17	25.20	.	0.69	0.36
OB-50B	OB-50	FPS-5	34.158	77.141	2.00	2.25	20.5	1.80	20.00	45.5	0.78	0.66

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUN %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR-31	0.25	.	.	.	.	.	.	.	87.79	.	.	.	.	.	.
OB-48D	2.43	0.90	0.94	1.46	0.05	85.80	66	47	.	.	.	.	.	1.09	1157.76
OB-49A	2.61	0.90	0.87	0.75	0.03	80.27	85	39	.	.	.	.	.	0.54	687.07
OB-49B	3.30	1.00	0.97	0.74	0.02	85.42	87	55	.	.	.	.	.	0.41	439.82
OB-49C	3.61	1.00	1.67	1.05	1.44	89.94	47	57	.	.	.	.	.	.	.
BR-96	0.33	.	.	.	.	.	.	.	75.81	.	.	.	.	.	.
OB-50A	1.75	0.70	0.62	0.34	0.03	80.95	19	34	.	.	.	.	.	0.23	468.44
BR-97	0.33	.	.	.	.	.	.	.	49.99	.	.	.	.	.	.
OB-50B	1.25	0.60	0.46	0.17	0.02	71.24	13	27	.	.	.	.	.	0.08	107.24

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-31	.	.	.	.	.	.	.	.	.	.	.	.
OB-48D	21.64	58.12	1.02	0.02	1.29	1.27	9.26	171.46	17.65	115.94	29.11	54.66
OB-49A	20.57	24.48	1.06	0.02	6.72	0.87	9.48	223.57	18.13	215.47	19.11	45.56
OB-49B	6.85	18.62	0.60	0.01	3.06	0.54	6.94	99.62	20.14	140.22	24.46	23.31
OB-49C	.	.	.	.	.	.	.	.	.	.	.	.
BR-96	.	.	.	.	.	.	.	.	.	.	.	.
OB-50A	24.29	24.99	0.72	0.01	7.36	1.63	3.65	126.14	9.61	577.70	31.18	20.51
BR-97	.	.	.	.	.	.	.	.	.	.	.	.
OB-50B	25.79	29.12	0.53	0.00	14.89	1.96	5.62	102.15	6.53	724.23	29.03	8.53

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-50C	OB-50	FPS-5	34.158	77.141	3.75	4.00	20.5	2.03	6.65	70.6	0.98	1.30
OB-50C	OB-50	FPS-5	34.158	77.141	3.75	4.00	20.5	2.03	6.65	70.6	0.98	1.30
OB-50D	OB-50	FPS-5	34.158	77.141	6.00	6.25	20.5	2.22	7.25	64.2	2.92	1.36
BR-98	OB-50	FPS-9	34.158	77.141	8.00	9.00	20.5	1.48	3.02	.	1.64	2.10
OB-51A	OB-51	OBS-1	34.153	77.055	2.00	2.25	29.5	1.78	3.18	73.8	1.25	1.18
BR-32	OB-51	OBS-1	34.153	77.055	4.30	4.50	29.5	1.77	1.95	.	1.05	0.50
OB-51B	OB-51	OBS-1	34.153	77.055	5.00	5.25	29.5	1.57	3.61	70.6	1.22	1.38
OB-51C	OB-51	OBS-1	34.153	77.055	8.00	8.25	29.5	1.19	3.36	74.4	1.16	1.17
OB-52A	OB-52	BBS-1	34.158	76.975	2.85	3.00	31.0	1.34	13.90	35.4	8.28	1.52

SPL NUM	AL2O3 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-50C	3.36	1.20	1.10	0.50	0.03	87.78	26	64	.	.	.	.	.	0.41	180.26
OB-50C	3.36	1.20	1.10	0.50	0.03	87.78	26	64	.	.	.	.	.	0.41	180.26
OB-50D	3.50	1.20	0.81	0.65	1.41	85.58	31	82	.	.	.	.	.	0.42	401.69
BR-98	1.46	.	.	.	.	.	.	.	75.52	.	.	.	.	.	.
OB-51A	2.65	0.90	0.88	0.53	0.03	86.20	27	63	.	.	.	.	.	0.39	349.01
BR-32	0.98	.	.	.	.	.	.	.	82.17	.	.	.	.	.	.
OB-51B	3.25	0.90	0.92	0.62	0.04	84.19	32	64	.	.	.	.	.	.	.
OB-51C	3.12	0.80	1.09	0.43	0.02	86.75	55	48	.	.	.	.	.	.	.
OB-52A	3.14	1.20	0.62	0.49	0.02	65.99	60	56	.	.	.	.	.	0.30	187.82

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-50C	40.88	48.48	1.24	0.01	5.81	2.41	4.59	256.40	24.95	248.68	37.70	9.60
OB-50C	40.88	48.48	1.24	0.01	5.81	2.41	4.59	256.40	24.95	248.68	37.70	9.60
OB-50D	45.86	48.94	1.15	0.01	5.55	1.76	11.03	124.28	20.59	243.19	41.29	22.01
BR-98	.	.	.	.	.	.	.	.	.	.	.	.
OB-51A	52.82	37.65	1.26	0.01	3.24	2.36	7.02	210.52	20.84	240.78	44.91	18.20
BR-32	.	.	.	.	.	.	.	.	.	.	.	.
OB-51B	.	.	.	.	.	.	.	.	.	.	.	.
OB-51C	.	.	.	.	.	.	.	.	.	.	.	.
OB-52A	84.36	29.23	1.42	0.01	13.64	1.28	8.47	23.94	22.10	256.71	34.74	11.80

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %
OB-52B	OB-52	BBS-1	34.158	76.975	3.75	4.00	31.0	1.40	13.80	35.2	8.51	2.29
BR-99	OB-52	BBS-1	34.158	76.975	3.90	4.40	31.0	1.42	18.79	.	8.23	1.18
BR-15	OB-53	BBS-2	34.160	76.915	1.25	1.50	31.0	3.77	7.88	.	0.79	0.67
OB-53A	OB-53	BBS-2	34.160	76.915	1.25	1.50	31.0	3.56	7.28	65.8	0.82	1.17
BR-16	OB-53	BBS-2	34.160	76.915	2.75	3.00	31.0	5.45	9.43	.	0.80	0.68
OB-53B	OB-53	BBS-2	34.160	76.915	2.75	3.00	31.0	5.24	9.21	61.5	1.31	1.24
OB-53C	OB-53	BBS-2	34.160	76.915	3.30	3.50	31.0	3.90	8.16	58.3	1.31	1.28
ML-10	OB-53	BBS-2	34.160	76.915	3.50	4.25	31.0	6.50	14.59	.	1.23	0.81
BR-17	OB-53	BBS-2	34.160	76.915	3.75	4.00	31.0	8.46	15.98	.	1.05	0.68

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-52B	4.07	1.30	0.90	0.59	0.02	68.10	75	76	.	.	.	.	.	0.40	362.37
BR-99	1.15	.	.	.	.	.	.	.	39.52	.	.	.	.	.	.
BR-15	1.06	.	.	.	.	.	.	.	75.93	.	.	.	.	.	.
OB-53A	2.33	0.90	0.41	0.21	0.01	82.54	23	75	.	.	.	.	.	0.15	155.34
BR-16	1.15	.	.	.	.	.	.	.	71.50	.	.	.	.	.	.
OB-53B	2.69	1.10	0.74	0.36	0.03	83.45	53	88	.	.	.	.	.	0.20	262.99
OB-53C	2.77	1.00	0.65	0.28	0.03	77.75	20	90	.	.	.	.	.	.	.
ML-10	1.07	0.75	0.24	.	.	.	.	.	65.20	2.15	0.65	0.97	3.63	.	.
BR-17	1.19	.	.	.	.	.	.	.	59.64	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-52B	79.42	41.60	2.06	0.02	12.51	1.19	11.50	32.14	24.94	255.42	34.03	22.58
BR-99	.	.	.	.	.	.	.	.	.	.	.	.
BR-15	.	.	.	.	.	.	.	.	.	.	.	.
OB-53A	32.44	35.05	1.09	0.01	5.60	2.83	11.60	288.75	19.42	389.87	50.32	10.53
BR-16	.	.	.	.	.	.	.	.	.	.	.	.
OB-53B	41.27	18.14	1.08	0.01	6.37	3.75	9.52	5.36	20.05	486.52	64.03	18.58
OB-53C	.	.	.	.	.	.	.	.	.	.	.	.
ML-10	.	.	.	.	.	.	.	.	.	.	.	.
BR-17	.	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %	AL203 %
BR-18	OB-53	BBS-2	34.160	76.915	4.25	4.50	31.0	9.77	18.67	.	1.55	0.82	1.76
OB-53D	OB-53	BBS-2	34.160	76.915	4.25	4.50	31.0	8.34	18.50	38.6	1.90	1.52	3.63
OB-53E	OB-53	BBS-2	34.160	76.915	4.75	5.00	31.0	4.53	.	.	1.72	1.48	3.45
OB-53F	OB-53	BBS-2	34.160	76.915	5.25	5.50	31.0	5.01	19.10	45.6	1.42	1.43	3.19
BR-19	OB-53	BBS-2	34.160	76.915	6.25	6.50	31.0	5.75	18.16	.	1.12	0.78	1.22
OB-53G	OB-53	BBS-2	34.160	76.915	6.50	6.75	31.0	0.97	17.50	39.6	1.81	3.53	9.03
OB-57A	OB-57	FPS-6	34.000	77.238	1.75	2.00	28.0	0.78	2.27	61.0	1.27	2.23	6.36
OB-57B	OB-57	FPS-6	34.000	77.238	4.00	4.25	28.0	1.86	2.62	59.9	1.02	2.00	6.00
BR-24	OB-57	FPS-6	34.000	77.238	5.25	5.55	28.0	1.34	1.83	.	1.17	0.82	1.14

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
BR-18	.	.	.	.	.	.	.	50.84	.	.	.	.	.	.	.
OB-53D	1.80	0.97	0.54	0.04	75.92	39	214	.	.	.	.	.	.	.	.
OB-53E	1.60	0.95	0.59	0.04	.	35	137	.	.	.	.	.	0.27	210.97	40.34
OB-53F	1.40	0.63	0.53	0.02	78.34	62	134	.	.	.	.	.	0.34	269.14	37.25
BR-19	.	.	.	.	.	.	.	55.94	.	.	.	.	.	.	.
OB-53G	1.90	1.86	0.77	0.07	77.08	52	124	.	.	.	.	.	0.23	351.50	44.40
OB-57A	1.70	1.42	0.71	0.03	77.82	83	92	.	.	.	.	.	0.75	574.42	68.66
OB-57B	1.60	1.50	0.67	0.03	77.26	81	88	.	.	.	.	.	0.64	494.16	64.80
BR-24	.	.	.	.	.	.	.	84.43	.	.	.	.	.	.	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR-18	.	.	.	.	.	.	.	.	.	.	.
OB-53D	.	.	.	.	.	.	.	.	.	.	.
OB-53E	30.25	1.06	0.01	17.00	3.35	2.33	321.41	21.50	610.18	51.57	19.33
OB-53F	28.35	1.14	0.02	13.75	4.13	9.20	156.63	19.89	564.93	55.23	18.54
BR-19	.	.	.	.	.	.	.	.	.	.	.
OB-53G	27.25	1.02	0.01	13.67	4.78	8.86	22.74	17.00	794.82	59.20	24.89
OB-57A	51.12	2.55	0.02	2.22	1.48	11.50	162.38	44.89	190.01	48.34	30.82
OB-57B	55.65	2.36	0.03	3.31	2.25	13.07	276.29	42.75	254.32	48.34	28.70
BR-24	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %	AL203 %
OB-57C	OB-57	FPS-5	34.000	77.238	6.50	6.75	28.0	1.53	11.50	30.5	6.39	3.13	7.51
BR100	OB-57	FPS-5	34.000	77.238	7.00	8.00	28.0	1.62	10.70	.	5.43	2.41	1.51
OB-58A	OB-58	OBS-2	34.000	77.123	3.40	3.45	31.0	1.40	6.20	65.8	1.96	1.70	3.51
OB-58B	OB-58	OBS-2	34.000	77.123	3.70	3.75	31.0	1.54	2.81	82.9	0.12	0.22	0.90
BR-8	OB-58	OBS-2	34.000	77.123	3.75	4.00	31.0	1.73	2.21	.	0.12	0.29	0.14
OB-58C	OB-58	OBS-2	34.000	77.123	4.40	4.45	31.0	1.47	7.18	38.3	5.32	4.19	9.03
OB-59A	OB-59	PLEIS	34.010	76.988	4.75	5.00	33.0	0.47	42.00	16.7	1.19	0.28	0.62
OB-59C	OB-59	PLEIS	34.010	76.988	5.89	6.00	33.0	2.28	23.80	34.3	1.94	1.09	2.85
OB-59B	OB-59	BBS-1	34.010	76.988	6.25	6.50	33.0	1.08	18.30	34.0	4.77	1.81	5.36

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
OB-57C	1.70	1.76	0.59	0.06	64.74	35	114	.	.	.	.	.	0.15	121.63	33.36
BR100	.	.	.	.	.	.	.	57.00	.	.	.	.	.	.	.
OB-58A	1.30	1.07	0.63	0.03	83.63	83	52	.	.	.	.	.	0.40	973.24	50.95
OB-58B	0.20	0.54	0.09	2.49	91.88	19	13	.	.	.	.	.	0.02	26.73	2.90
BR-8	.	.	.	.	.	.	.	86.72	.	.	.	.	.	.	.
OB-58C	3.50	1.80	0.61	0.06	71.49	38	127	.	.	.	.	.	.	.	.
OB-59A	0.50	0.44	0.09	0.01	62.34	29	9	.	.	.	.	.	0.04	49.51	9.45
OB-59C	1.20	0.63	0.37	0.02	68.52	51	44	.	.	.	.	.	0.27	475.39	38.50
OB-59B	1.80	1.26	0.56	0.04	69.00	34	71	.	.	.	.	.	0.36	206.21	113.97

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-57C	23.81	1.20	0.01	2.80	0.00	3.61	112.64	26.02	143.41	23.00	8.54
BR100	.	.	.	.	.	.	.	.	.	.	.
OB-58A	29.22	1.41	0.01	4.10	1.36	14.29	194.31	23.67	177.47	38.62	56.74
OB-58B	5.39	0.11	0.00	1.01	0.64	2.93	1.53	6.32	150.30	27.12	1.88
BR-8	.	.	.	.	.	.	.	.	.	.	.
OB-58C	.	.	.	.	.	.	.	.	.	.	.
OB-59A	0.00	0.17	0.00	30.95	0.21	2.00	96.22	0.67	752.12	9.13	1.00
OB-59C	21.75	1.10	0.01	26.73	3.16	6.86	154.26	15.93	574.61	38.69	29.29
OB-59B	47.67	2.31	0.01	18.20	0.86	9.17	444.68	48.03	346.28	39.81	11.22

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-59D	OB-59	BBS-1	34.010	76.988	6.75	7.00	33.0	1.27	18.30	27.4	6.35	2.46
BR-25	OB-59	BBS-1	34.010	76.988	7.75	7.90	33.0	2.56	10.79	.	0.65	0.50
OB-59E	OB-59	BBS-1	34.010	76.988	7.80	8.20	33.0	2.16	9.00	67.9	1.06	1.00
OB-60A	OB-60	BBS-3	34.163	76.846	1.25	1.50	33.0	0.72	2.23	80.3	1.12	1.09
BR101	OB-60	BBS-3	34.163	76.846	2.00	3.00	33.0	0.88	8.03	.	1.00	1.00
OB-60B	OB-60	BBS-3	34.163	76.846	3.50	3.75	33.0	0.76	8.68	63.1	1.31	1.31
OB-60C	OB-60	BBS-3	34.163	76.846	6.00	6.25	33.0	1.17	3.09	62.1	1.96	2.10
OB-62A	OB-62	PLEIS	33.703	77.533	3.25	3.50	24.6	1.60	9.42	39.8	2.49	2.77
OB-62B	OB-62	OBS-U	33.703	77.533	4.25	4.50	24.6	1.69	8.19	43.2	3.93	3.16

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-59D	6.90	2.70	1.27	0.53	1.34	68.61	32	91	.	.	.	.	.	.	.
BR-25	0.38	.	.	.	.	.	.	.	71.92	.	.	.	.	.	.
OB-59E	.	1.00	.	0.26	1.30	.	16	37	.	.	.	.	.	0.17	68.39
OB-60A	4.32	1.20	1.49	0.25	0.01	92.82	43	36	.	.	.	.	.	0.20	133.96
BR101	0.80	.	.	.	.	.	.	.	76.89	.	.	.	.	.	.
OB-60B	4.31	1.30	1.22	0.34	0.03	82.37	20	46	.	.	.	.	.	0.09	120.79
OB-60C	5.40	1.50	1.22	0.40	0.04	78.99	26	68	.	.	.	.	.	0.11	87.29
OB-62A	5.92	1.80	1.11	0.49	0.02	65.42	69	90	.	.	.	.	.	0.40	414.81
OB-62B	7.10	1.80	1.47	0.55	0.02	71.17	75	116	.	.	.	.	.	0.28	158.75

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-59D	.	.	.	.	.	.	.	.	.	.	.	.
BR-25	.	.	.	.	.	.	.	.	.	.	.	.
OB-59E	58.90	44.16	1.09	0.01	10.69	2.97	4.65	177.84	19.81	388.70	39.17	4.42
OB-60A	20.18	31.03	1.09	0.01	1.91	0.25	10.40	272.93	33.77	207.94	23.44	7.72
BR101	.	.	.	.	.	.	.	.	.	.	.	.
OB-60B	12.55	14.28	0.53	0.00	2.75	0.00	3.56	69.67	12.43	178.25	11.86	6.64
OB-60C	21.09	22.16	0.90	0.01	0.91	0.00	3.70	104.06	20.46	98.30	22.06	4.04
OB-62A	81.59	50.30	2.55	0.01	9.43	1.28	13.66	542.56	40.22	517.95	36.26	21.39
OB-62B	75.67	45.84	2.18	0.01	4.58	0.59	19.03	304.71	49.61	314.41	42.69	10.29

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	HGO %	FE203 %
OB-62C	OB-62	OBS-U	33.703	77.533	5.75	5.82	24.6	1.93	7.21	50.8	3.11	3.11
P-7	OB-63	FPS-2	33.763	77.581	0.15	0.25	24.4	0.98	9.94	35.5	2.17	3.50
OB-63A	OB-63	FPS-2	33.763	77.581	1.25	1.50	24.4	1.10	22.20	28.0	1.56	2.33
P-3	OB-63	FPS-2	33.763	77.581	1.60	1.70	24.4	1.21	25.80	18.5	1.59	2.04
BR-75	OB-63	FPS-2	33.763	77.581	1.80	2.00	24.4	3.16	28.66	.	1.87	1.44
OB-63B	OB-63	FPS-2	33.763	77.581	2.25	2.50	24.4	9.24	30.90	17.9	1.40	1.83
HL-31	OB-64	HOLO	33.805	77.630	0.30	0.54	20.1	4.07	27.52	.	1.01	1.23
BR-71	OB-64	HOLO	33.805	77.630	0.40	.	20.1	4.55	26.77	.	0.82	0.81
BR-72	OB-64	FPS-1	33.805	77.630	4.00	4.50	20.1	12.88	29.35	.	1.49	1.05

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-62C	7.50	2.00	1.52	0.61	0.05	77.92	40	143	.	.	.	.	.	.	.
P-7	8.99	2.10	2.30	0.68	0.05	66.30	1	2	.	.	.	.	.	.	.
OB-63A	5.71	1.70	2.08	0.48	0.04	65.21	33	96	.	.	.	.	.	.	.
P-3	5.32	2.20	1.61	0.40	0.04	58.75	1	2	.	.	.	.	.	.	.
BR-75	1.42	.	.	.	.	.	.	.	31.59	.	.	.	.	.	.
OB-63B	2.98	2.00	0.66	0.31	0.01	67.26	38	87	.	.	.	.	0.21	154.18	.
HL-31	0.46	.	.	.	.	.	.	.	47.58	.	.	.	.	.	.
BR-71	0.22	.	.	.	.	.	.	.	45.77	.	.	.	.	.	.
BR-72	1.16	.	.	.	.	.	.	.	34.38	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	HO PPM
OB-62C
P-7
OB-63A
P-3
BR-75
OB-63B	55.13	42.73	1.48	.	27.61	10.05	8.95	445.49	14.23	1043.76	70.38	22.18
HL-31
BR-71
BR-72

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
ML-32	OB-64	FPS-1	33.805	77.630	4.00	4.50	20.1	12.55	31.97	.	0.77	0.87
OB-64A	OB-64	FPS-1	33.805	77.630	4.00	4.25	20.1	12.47	26.90	23.9	1.59	1.22
OB-64B	OB-64	FPS-1	33.805	77.630	4.50	4.75	20.1	15.13	31.20	15.3	1.38	1.01
P-14	OB-64	FPS-1	33.805	77.630	4.50	4.70	20.1	14.28	32.30	10.9	1.44	1.04
ML-12	OB-64	FPS-1	33.805	77.630	4.70	5.45	20.1	15.70	33.01	.	1.35	0.39
BR-73	OB-64	FPS-1	33.805	77.630	5.50	5.80	20.1	15.19	31.14	.	1.12	0.76
OB-64C	OB-64	FPS-1	33.805	77.630	6.00	6.20	20.1	14.60	30.50	15.9	1.02	0.73
OB-64D	OB-64	FPS-1	33.805	77.630	6.35	6.40	20.1	0.60	22.30	46.1	0.49	0.28
BR-76	OB-65	FPS-2	33.813	77.558	2.00	2.50	23.2	1.00	6.29	.	1.15	2.04

SPL NUM	AL203 %	NA20 %	K20 %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
ML-32	0.46	.	.	.	.	.	.	.	37.09	.	.	.	.	.	.
OB-64A	2.57	1.50	0.76	0.45	0.03	71.42	36	120	.	.	.	.	.	0.09	81.92
OB-64B	2.18	1.50	0.59	0.37	0.03	68.74	33	129	.	.	.	.	.	0.07	73.62
P-14	2.34	1.60	0.53	0.34	0.03	64.83	31	123	.	.	.	.	.	.	.
ML-12	0.97	0.85	0.18	.	.	.	.	.	27.30	2.95	1.63	1.45	9.08	.	.
BR-73	1.26	.	.	.	.	.	.	.	29.46	.	.	.	.	.	.
OB-64C	1.64	1.30	0.19	0.31	0.01	66.29	41	118	.	.	.	.	.	0.23	113.91
OB-64D	1.28	0.30	0.58	0.17	0.02	72.19	15	31	.	.	.	.	.	.	.
BR-76	1.09	.	.	.	.	.	.	.	72.08	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-32	.	.	.	.	.	.	.	.	.	.	.	.
OB-64A	33.61	16.22	0.44	0.00	7.41	0.00	1.99	113.51	7.38	644.45	113.02	5.40
OB-64B	40.02	13.70	0.40	0.00	9.27	0.22	1.22	131.60	5.73	894.63	189.89	4.90
P-14	.	.	.	.	.	.	.	.	.	.	.	.
ML-12	.	.	.	.	.	.	.	.	.	.	.	.
BR-73	.	.	.	.	.	.	.	.	.	.	.	.
OB-64C	92.73	29.25	0.74	0.01	32.18	22.68	3.31	285.07	7.27	1599.20	249.65	10.68
OB-64D	.	.	.	.	.	.	.	.	.	.	.	.
BR-76	.	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %
P-18	OB-65	FPS-2	33.813	77.558	3.00	3.10	23.2	0.80	7.25	46.3	1.73	1.74
BR-77	OB-65	FPS-2	33.813	77.558	4.00	4.30	23.2	1.08	3.11	.	1.06	1.60
P-13	OB-65	FPS-2	33.813	77.558	4.70	4.80	23.2	0.90	4.10	52.8	2.25	2.71
ML-19	OB-66	FPS-6	33.836	77.498	1.60	2.20	.	2.40	12.16	.	0.96	0.61
BR-74	OB-66	FPS-6	33.836	77.498	2.00	2.50	.	2.44	11.52	.	0.58	0.62
P-23	OB-66	FPS-3	33.836	77.498	3.50	3.60	.	1.77	3.26	58.3	1.79	1.65
OB-67A	OB-67	FPS-6	33.835	77.448	3.25	3.50	23.5	1.01	18.40	44.9	0.74	0.97
BR-79	OB-67	FPS-6	33.835	77.448	3.50	4.00	23.5	1.08	18.03	.	0.55	0.59
P-8	OB-67	FPS-6	33.835	77.448	4.50	4.60	23.5	0.99	19.80	37.3	0.79	0.95

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
P-18	7.42	2.90	1.88	0.61	0.05	70.75	35	94	.	.	.	.	.	.	.
BR-77	1.00	.	.	.	.	.	.	.	80.60	.	.	.	.	.	.
P-13	8.04	2.10	1.73	0.74	0.05	75.46	39	112	.	.	.	.	.	.	.
ML-19	0.48	0.60	0.23	.	.	.	.	.	73.80	1.21	0.25	0.57	6.64	.	.
BR-74	0.56	.	.	.	.	.	.	.	70.59	.	.	.	.	.	.
P-23	4.42	1.90	1.32	0.43	0.03	74.88	25	105	.	.	.	.	.	.	.
OB-67A	3.64	1.50	1.03	0.70	0.03	72.98	79	38	.	.	.	.	.	0.50	283.54
BR-79	0.45	.	.	.	.	.	.	.	59.55	.	.	.	.	.	.
P-8	3.64	2.40	1.24	0.61	0.04	67.85	31	42	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
P-18
BR-77
P-13
ML-19
BR-74
P-23
OB-67A	26.65	34.64	0.78	0.02	18.10	1.55	6.92	115.58	19.15	427.77	35.30	17.00
BR-79
P-8

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %
OB-67B	OB-67	FPS-6	33.835	77.448	4.75	5.00	23.5	1.15	3.08	65.8	1.10	1.01
P-12	OB-67	FPS-6	33.835	77.448	7.70	7.80	23.5	1.03	12.40	41.9	1.68	1.14
P-4	OB-68	OBS-3	33.833	77.285	1.50	1.60	25.9	1.66	11.30	39.4	4.12	1.13
BR-80	OB-68	OBS-3	33.833	77.285	2.50	2.70	25.9	4.67	8.90	.	1.90	1.47
ML-20	OB-68	OBS-2	33.833	77.285	3.05	3.55	25.9	1.60	6.95	.	2.84	0.45
BR-81	OB-68	OBS-2	33.833	77.285	3.70	3.80	25.9	1.40	11.70	.	6.37	0.76
P-9	OB-68	OBS-2	33.833	77.285	4.80	4.90	25.9	1.77	5.18	62.1	1.92	0.98
P-1	OB-70	FPS-2	33.681	77.645	1.50	1.60	22.3	1.59	4.69	48.2	2.33	2.82
OB-71A	OB-71	BBS-1	34.448	77.913	0.50	0.50	22.0	3.20	7.32	66.3	1.02	1.46

SPL NUM	AL2O3 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-67B	2.00	0.70	0.47	0.94	0.03	76.36	105	41	.	.	.	.	.	0.74	880.78
P-12	4.59	2.60	1.45	0.67	0.04	67.54	32	52	.	.	.	.	.	.	.
P-4	4.94	2.20	1.33	0.56	0.04	66.68	1	2	.	.	.	.	.	.	.
BR-80	1.51	.	.	.	.	.	.	.	66.70	.	.	.	.	.	.
ML-20	0.37	0.44	0.14	.	.	.	.	.	83.00	0.79	0.24	0.39	4.67	.	.
BR-81	0.83	.	.	.	.	.	.	.	54.26	.	.	.	.	.	.
P-9	2.81	1.20	0.81	0.52	0.03	77.35	25	49	.	.	.	.	.	.	.
P-1	8.02	2.40	1.79	0.81	0.12	72.81	1	2	.	.	.	.	.	.	.
OB-71A	2.98	0.90	0.91	0.53	0.03	84.65	29	57	.	.	.	.	.	0.28	373.50

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-67B	40.95	25.08	0.96	0.02	3.11	2.11	10.05	86.67	14.31	162.81	27.97	48.74
P-12	.	.	.	.	.	.	.	.	.	.	.	.
P-4	.	.	.	.	.	.	.	.	.	.	.	.
BR-80	.	.	.	.	.	.	.	.	.	.	.	.
ML-20	.	.	.	.	.	.	.	.	.	.	.	.
BR-81	.	.	.	.	.	.	.	.	.	.	.	.
P-9	.	.	.	.	.	.	.	.	.	.	.	.
P-1	.	.	.	.	.	.	.	.	.	.	.	.
OB-71A	36.44	29.86	1.18	0.01	4.46	2.12	12.70	118.91	26.90	374.08	66.24	23.61

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-71B	OB-71	BBS-1	34.448	77.913	1.00	1.00	22.0	1.42	12.90	39.2	5.20	1.65
OB-72A	OB-72	BBS-2	34.453	76.876	1.00	1.00	22.0	2.30	16.40	45.8	1.42	1.97
BR-78	OB-72	BBS-2	34.453	76.876	1.20	1.40	22.0	3.32	7.48	.	0.65	1.02
P-5	OB-72	BBS-2	34.453	76.876	1.50	1.60	22.0	2.99	7.32	61.5	0.75	1.14
ML-8	OB-72	BBS-2	34.453	76.876	1.75	2.20	22.0	2.88	6.95	.	0.89	1.20
OB-72B	OB-72	BBS-2	34.453	76.876	3.00	3.25	22.0	2.60	5.32	40.1	1.88	1.91
OB-72C	OB-72	BBS-1	34.453	76.876	4.00	4.00	22.0	3.38	11.60	56.2	2.67	1.66
P-10	OB-72	BBS-1	34.453	76.876	4.30	.	22.0	1.02	22.90	16.5	5.75	0.95
OB-72D	OB-72	BBS-1	34.453	76.876	4.50	4.50	22.0	2.75	5.22	66.3	1.66	1.79

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-71B	3.67	1.10	0.91	0.37	0.04	66.53	25	77	.	.	.	.	.	0.08	42.25
OB-72A	3.61	1.20	0.82	0.38	1.40	75.37	23	48	.	.	.	.	.	.	.
BR-78	0.86	.	.	.	.	.	.	.	75.10	.	.	.	.	.	.
P-5	2.33	0.60	0.78	0.35	0.03	77.87	0	1	.	.	.	.	.	.	.
ML-8	1.24	0.61	0.28	.	.	.	.	.	80.40	1.76	0.33	0.69	1.3	.	.
OB-72B	4.14	1.00	1.25	0.54	0.04	58.84	31	82	.	.	.	.	.	0.26	287.72
OB-72C	3.67	1.10	0.91	0.51	1.45	83.17	30	90	.	.	.	.	.	0.13	490.86
P-10	2.36	0.80	0.66	0.31	0.03	51.32	19	55	.	.	.	.	.	.	.
OB-72D	3.73	1.10	1.04	0.56	1.54	85.73	29	81	.	.	.	.	.	0.13	476.06

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-71B	9.55	14.31	0.58	0.00	3.23	0.00	0.81	109.57	12.57	103.50	11.35	3.19
OB-72A	.	.	.	.	.	.	.	.	.	.	.	.
BR-78	.	.	.	.	.	.	.	.	.	.	.	.
P-5	.	.	.	.	.	.	.	.	.	.	.	.
ML-8	.	.	.	.	.	.	.	.	.	.	.	.
OB-72B	50.83	47.56	1.46	0.01	3.06	1.43	12.93	205.95	36.04	362.18	63.91	23.31
OB-72C	26.37	24.18	0.80	0.01	4.14	0.33	3.80	104.51	16.15	275.86	31.28	99.75
P-10	.	.	.	.	.	.	.	.	.	.	.	.
OB-72D	24.40	21.99	0.70	0.00	1.20	0.00	1.53	106.90	14.79	158.10	30.39	28.35

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	HGO %	FE203 %
P-24	OB-79	BBS-1	34.635	76.868	4.50	4.60	15.0	2.82	.	.	0.26	0.89
P-6	OB-79	BBS-1	34.635	76.868	5.90	6.00	15.0	2.20	4.20	57.80	1.39	2.91
P-26	OB-80	OBS-1	34.605	77.005	4.90	5.30	15.0	0.99	19.50	40.10	1.80	0.88
BR118	OB-90	BBS-8?	34.641	76.723	5.80	6.00	15.5	1.42	3.31	.	0.38	1.08
BR106	OB-91	BBS-1	34.636	76.823	2.50	2.75	15.8	2.90	15.09	.	1.36	1.30
BR107	OB-91	BBS-1	34.636	76.823	2.80	2.90	15.8	3.45	14.28	.	1.44	1.37
ML-23	OB-91	BBS-1	34.636	76.823	2.80	3.20	15.8	3.82	15.75	.	1.97	1.29
BR108	OB-91	BBS-1	34.636	76.823	3.50	3.75	15.8	4.25	10.95	.	1.32	1.09
OB-91A	OB-91	BBS-1	34.636	76.823	3.50	3.50	15.8	4.52	11.80	57.80	1.79	1.85

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
P-24	0.94	0.3	0.09	0.14	0.04	.	47	127	.	.	.	.	.	.	.
P-6	6.32	0.9	1.27	1.25	0.07	78.38	1	2	.	.	.	.	.	.	.
P-26	1.63	0.4	0.49	0.15	0.02	66.02	11	29	.	.	.	.	.	.	.
BR118	0.84	.	.	.	.	.	.	.	85.92	.	.	.	.	.	.
BR106	1.18	.	.	.	.	.	.	.	85.92	.	.	.	.	.	.
BR107	1.07	.	.	.	.	.	.	.	64.21	.	.	.	.	.	.
ML-23	0.89	.	.	.	.	.	.	.	64.91	.	.	.	.	.	.
BR108	1.04	.	.	.	.	.	.	.	71.57	.	.	.	.	.	.
OB-91A	2.58	0.6	0.79	1.00	0.06	82.81	50	63	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
P-24
P-6
P-26
BR118
BR106
BR107
ML-23
BR108
OB-91A

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	H60 %	FE203 %
ML-24	OB-91	BBS-1	34.636	76.823	3.90	4.20	15.8	3.52	11.42	.	1.24	1.27
BR109	OB-91	BBS-1	34.636	76.823	4.00	4.25	15.8	3.84	10.17	.	1.21	1.04
BR110	OB-91	BBS-1	34.636	76.823	4.50	4.75	15.8	2.95	7.63	.	0.90	1.27
ML-25	OB-91	BBS-1	34.636	76.823	4.80	5.20	15.8	1.88	7.86	.	0.84	1.30
BR111	OB-91	BBS-1	34.636	76.823	5.00	5.25	15.8	2.11	6.98	.	0.86	1.17
BR112	OB-91	BBS-1	34.636	76.823	5.50	5.75	15.8	1.63	6.02	.	0.62	1.22
BR113	OB-91	BBS-1	34.636	76.823	6.00	6.25	15.8	1.32	4.80	.	0.58	1.12
OB-91B	OB-91	BBS-1	34.636	76.823	6.00	6.00	15.8	1.10	4.76	66.30	0.88	2.18
OB-92A	OB-92	BBS-4	34.156	76.788	3.50	3.75	32.0	0.76	23.50	46.10	0.76	0.33

SPL NUM	AL2O3 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
ML-24	0.72	.	.	.	.	.	.	.	73.59	.	.	.	.	.	.
BR109	0.81	.	.	.	.	.	.	.	69.10	.	.	.	.	.	.
BR110	0.95	.	.	.	.	.	.	.	77.92	.	.	.	.	.	.
ML-25	0.60	.	.	.	.	.	.	.	80.69	.	.	.	.	.	.
BR111	0.82	.	.	.	.	.	.	.	80.27	.	.	.	.	.	.
BR112	0.84	.	.	.	.	.	.	.	82.55	.	.	.	.	.	.
BR113	0.78	.	.	.	.	.	.	.	84.32	.	.	.	.	.	.
OB-91B	4.08	0.8	1.17	1.16	0.07	82.53	56	62	.	.	.	.	.	0.21	155.92
OB-92A	0.84	0.3	0.29	0.03	0.93	73.87	4	9	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-24
BR109
BR110
ML-25
BR111
BR112
BR113
OB-91B	19.43	21.81	0.68	0.01	1.30	0.00	0.51	52.81	9.77	73.44	21.41	7.82
OB-92A

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-92B	OB-92	BBS-4	34.156	76.788	4.25	4.50	32.0	0.76	5.25	78.10	0.20	0.21
BR119	OB-92	BBS-4	34.156	76.788	5.00	5.25	32.0	0.87	1.49	.	0.13	0.36
OB-92C	OB-92	BBS-4	34.156	76.788	5.00	5.25	32.0	0.75	1.66	77.00	0.18	0.23
OB-92D	OB-92	BBS-4	34.156	76.788	5.50	5.50	32.0	0.84	1.59	78.10	0.24	0.30
OB-92E	OB-92	BBS-4	34.156	76.788	6.00	6.00	32.0	0.81	1.54	73.80	0.13	0.23
BR104	OB-93B	HOLO	34.160	76.733	2.50	2.75	32.0	0.30	15.52	.	0.68	0.79
BR105	OB-93B	HOLO	34.160	76.733	3.75	4.00	32.0	0.32	28.92	.	0.94	0.90
BR122	OB-94	HOLO	34.163	76.923	0.40	0.50	30.7	1.55	22.76	.	1.24	0.81
ML-21	OB-94	BBS-2	34.163	76.923	0.69	1.00	30.7	7.50	23.31	.	1.36	1.24

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	HNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-92B	0.98	0.2	0.31	0.03	0.00	86.10	0	6	.	.	.	.	.	0.03	21.10
BR119	0.20	.	.	.	.	.	.	.	92.65	.	.	.	.	.	.
OB-92C	1.11	0.4	0.39	0.03	0.03	81.80	0	1	.	.	.	.	.	0.04	16.37
OB-92D	1.37	0.4	0.57	0.04	0.00	83.50	6	9	.	.	.	.	.	0.04	20.74
OB-92E	1.16	0.3	0.63	0.03	0.00	78.69	13	8	.	.	.	.	.	0.06	18.64
BR104	0.15	.	.	.	.	.	.	.	66.40	.	.	.	.	.	.
BR105	0.18	.	.	.	.	.	.	.	41.69	.	.	.	.	.	.
BR122	0.61	.	.	.	.	.	.	.	51.26	.	.	.	.	.	.
ML-21	1.28	.	.	.	.	.	.	.	50.11	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-92B	4.52	15.67	0.24	0.00	6.84	1.42	5.64	36.48	8.08	142.78	8.60	0.77
BR119	.	.	.	.	.	.	.	.	.	.	.	.
OB-92C	3.12	20.03	0.26	0.00	1.59	0.99	7.89	97.73	12.64	124.32	13.99	0.01
OB-92D	1.92	15.33	0.27	0.00	1.62	1.30	6.72	23.11	11.97	119.90	9.83	0.44
OB-92E	1.21	32.19	0.41	0.00	2.95	2.39	14.16	141.71	14.61	168.18	13.36	1.17
BR104
BR105
BR122
ML-21

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CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-94A	OB-94	BBS-2	34.163	76.923	0.70	0.95	30.7	8.34	21.40	40.50	1.52	1.37
BR-23	OB-94	BBS-2	34.163	76.923	1.00	1.20	30.7	7.54	20.64	.	1.28	1.21
BR121	OB-94	BBS-2	34.163	76.923	1.00	1.20	30.7	1.34	13.03	.	0.60	.
P-17	OB-94	BBS-2	34.163	76.923	1.00	1.10	30.7	3.33	.	.	1.28	1.13
OB-94B	OB-94	BBS-2	34.163	76.923	1.50	1.75	30.7	1.40	30.90	25.00	1.13	1.07
BR124	OB-94	BBS-2	34.163	76.923	1.70	1.90	30.7	1.77	31.62	.	1.02	0.87
BR125	OB-95	BBS-2	34.160	76.870	.	.	30.8	1.00	15.52	.	0.68	0.80
OB-95A	OB-95	BBS-3	34.160	76.870	1.25	1.50	30.8	0.84	17.20	54.00	0.97	1.09
OB-95B	OB-95	BBS-2	34.160	76.870	2.20	2.40	30.8	0.72	15.60	5.35	0.91	1.37

SPL NUM	AL203 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-94A	2.49	1.5	0.75	0.40	0.03	78.32	26	211	.	.	.	.	.	0.07	80.36
BR-23	0.60	.	.	.	.	.	.	.	50.33	.	.	.	.	.	.
BR121	0.13	.	.	.	.	.	.	.	71.22	.	.	.	.	.	.
P-17	2.26	0.8	0.53	0.40	0.04	.	23	102	.	.	.	.	.	.	.
OB-94B	2.28	0.8	0.28	0.44	0.02	63.39	46	62	.	.	.	.	.	0.29	816.78
BR124	0.67	.	.	.	.	.	.	.	36.30	.	.	.	.	.	.
BR125	0.28	.	.	.	.	.	.	.	66.57	.	.	.	.	.	.
OB-95A	1.50	0.7	0.22	0.22	0.01	76.79	19	28	.	.	.	.	.	0.15	175.44
OB-95B	3.37	1.3	0.65	0.40	0.02	29.71	44	68	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-94A	24.30	6.49	0.45	0.00	5.69	0.00	0.48	112.94	5.93	381.41	24.03	7.25
BR-23	.	.	.	.	.	.	.	.	.	.	.	.
BR121	.	.	.	.	.	.	.	.	.	.	.	.
P-17	.	.	.	.	.	.	.	.	.	.	.	.
OB-94B	19.89	10.05	1.03	0.01	36.07	1.72	5.74	166.62	14.32	338.02	19.22	48.03
BR124	.	.	.	.	.	.	.	.	.	.	.	.
BR125
OB-95A	23.80	14.70	0.98	0.01	17.03	1.33	5.91	115.57	6.55	1072.56	25.47	6.70
OB-95B

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CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	HGO %	FE203 %
BR114	OB-96	H0LO	33.901	77.455	0.60	0.70	25.9	0.47	7.02	.	0.28	0.36
BR115	OB-96	FPS-6	33.901	77.455	1.40	1.50	25.9	1.91	17.64	.	0.58	0.76
P-20	OB-96	FPS-6	33.901	77.455	1.40	1.50	25.9	1.53	32.30	19.7	0.76	0.72
OB-96A	OB-96	FPS-6	33.901	77.455	2.25	2.50	25.9	1.73	22.00	36.6	0.66	0.98
P-16	OB-96	FPS-6	33.901	77.455	2.90	3.00	25.9	1.77	18.60	37.7	0.74	1.24
P-22	OB-96	FPS-6	33.901	77.455	4.40	4.50	25.9	1.38	11.60	43.7	1.22	1.76
OB-96B	OB-96	FPS-6	33.901	77.455	5.25	5.50	25.9	1.54	9.45	51.5	1.35	1.96
BR103	OB-97	FPS-2	33.915	77.491	1.40	1.50	25.2	2.54	7.87	.	0.84	1.00
P-25	OB-97	FPS-2	33.915	77.491	1.40	1.50	25.2	2.32	8.37	53.2	0.83	1.28

SPL NUM	AL203 %	NA20 %	K20 %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR114	0.09	.	.	.	.	.	.	.	82.97	.	.	.	.	.	.
BR115	0.67	.	.	.	.	.	.	.	60.84	.	.	.	.	.	.
P-20	1.80	0.9	0.62	0.52	0.04	58.98	26	40	.	.	.	.	.	.	.
OB-96A	2.52	1.0	0.70	0.74	0.03	67.03	86	48	.	.	.	.	.	0.54	698.00
P-16	3.53	1.2	1.16	0.85	0.05	66.85	40	63	.	.	.	.	.	.	.
P-22	5.15	1.4	1.60	0.73	0.05	68.61	37	97	.	.	.	.	.	.	.
OB-96B	5.55	1.7	1.77	0.88	0.06	75.78	46	101	.	.	.	.	.	0.23	525.51
BR103	0.92	.	.	.	.	.	.	.	76.29	.	.	.	.	.	.
P-25	4.17	1.7	1.21	0.77	0.04	73.96	38	80	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR114	.	.	.	.	.	.	.	.	.	.	.	.
BR115	.	.	.	.	.	.	.	.	.	.	.	.
P-20	.	.	.	.	.	.	.	.	.	.	.	.
OB-96A	68.45	28.22	0.89	0.02	20.13	2.21	6.58	132.29	14.29	549.43	433.99	37.60
P-16	.	.	.	.	.	.	.	.	.	.	.	.
P-22
OB-96B	26.17	27.67	0.74	0.01	2.78	0.00	1.57	92.49	14.66	162.19	27.10	27.58
BR103
P-25

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CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %
P-11	OB-97	FPS-2	33.915	77.491	2.90	3.00	25.2	3.13	5.81	62.10	1.48	1.68
P-15	OB-97	FPS-2	33.915	77.491	4.40	4.50	25.2	1.43	13.00	33.30	6.37	1.58
P-19	OB-97	FPS-2	33.915	77.491	5.90	6.00	25.2	1.24	2.75	46.40	3.14	3.71
BR116	OB-98	HOLO	33.783	77.635	0.10	0.20	25.3	4.14	22.57	.	0.90	1.65
ML-22	OB-98	HOLO	33.783	77.635	0.75	1.00	25.3	3.86	29.84	.	1.30	1.67
BR117	OB-98	HOLO	33.783	77.635	1.00	1.10	25.3	3.70	22.48	.	0.96	1.27
OB-98A	OB-98	HOLO	33.783	77.635	1.25	1.50	25.3	1.53	15.10	31.00	2.45	2.86
P-21	OB-98	FPS-2	33.783	77.635	1.40	1.50	25.3	1.25	13.30	27.40	2.11	2.82
OB-98B	OB-98	FPS-2	33.783	77.635	3.25	3.50	25.3	1.02	17.80	34.70	2.18	2.87

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	C02 %	TI %	ZR PPM	CR PPM
P-11	5.19	2.1	1.28	0.88	0.05	83.75	47	113	.	.	.	.	.	.	.	.
P-15	4.77	1.2	1.03	0.63	0.05	63.37	5	81	.	.	.	.	.	.	.	.
P-19	9.68	1.6	1.68	0.86	0.06	71.18	49	148	.	.	.	.	.	.	.	.
BR116	0.36	.	.	.	.	.	.	.	51.38	.	.	.	.	.	.	.
ML-22	0.54	.	.	.	.	.	.	.	42.86	.	.	.	.	.	.	.
BR117	0.54	.	.	.	.	.	.	.	51.68	.	.	.	.	.	.	.
OB-98A	8.00	2.2	1.13	0.55	0.02	64.93	74	124	.	.	.	.	.	.	.	.
P-21	8.68	2.3	1.47	0.60	0.05	60.06	46	139	.	.	.	.	.	.	.	.
OB-98B	7.58	1.9	2.00	0.58	0.02	70.66	85	126	.	.	.	.	0.41	205.37	91.87	

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
P-11
P-15
P-19
BR116
ML-22
BR117
OB-98A
P-21
OB-98B	56.06	2.53	0.01	15.26	0.96	14.92	270.68	52.53	529.20	43.54	17.05

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
P-2	OB-98	FPS-2	33.783	77.635	4.00	4.10	25.3	1.00	17.40	19.40	2.12	3.48
BR120	OB-99	PLEIS	34.011	76.836	4.00	4.10	35.6	0.80	23.07	.	0.36	0.15
OB-103A	OB-103	FPS-2	34.005	77.381	5.00	5.00	29.9	1.16	5.08	70.10	1.57	1.07
OB-103B	OB-103	FPS-2	34.005	77.381	5.90	5.90	29.9	1.13	5.46	65.30	1.42	1.14
OB-105A	OB-105	FPS-2	33.965	77.491	1.25	1.50	29.2	1.82	11.10	58.90	1.10	1.30
OB-105B	OB-105	FPS-2	33.965	77.491	2.25	2.50	29.2	2.19	7.63	45.20	0.89	1.36
OB-105C	OB-105	FPS-2	33.965	77.491	3.25	3.50	29.2	3.72	12.10	52.50	1.66	1.32
OB-105D	OB-105	FPS-2	33.965	77.491	4.25	4.50	29.2	5.58	13.40	53.50	0.57	1.06
OB-105E	OB-105	FPS-1	33.965	77.491	5.25	5.50	29.2	9.59	21.00	44.60	0.73	1.01

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
P-2	7.29	2.8	1.90	0.48	0.05	55.95	1	3	.	.	.	.	.	.	.	.
BR120	0.06	.	.	.	.	.	.	.	56.01	.	.	.	.	.	.	.
OB-103A	3.27	0.9	0.81	0.89	0.03	84.92	104	62	.	.	.	.	.	0.83	445.96	52.77
OB-103B	3.07	0.7	0.95	0.92	0.04	80.21	47	63	.	.	.	.	.	.	.	.
OB-105A	3.74	1.2	1.40	0.90	0.03	81.49	110	72	.	.	.	.	.	.	.	.
OB-105B	3.72	1.1	1.26	0.97	0.05	64.45	52	186	.	.	.	.	.	0.24	187.96	24.24
OB-105C	3.75	0.9	1.22	0.90	0.03	78.18	109	83	.	.	.	.	.	0.64	521.75	54.57
OB-105D	2.85	1.2	1.02	0.98	0.04	80.28	56	81	.	.	.	.	.	.	.	.
OB-105E	2.73	1.2	0.66	0.69	0.02	82.32	82	100	.	.	.	.	.	.	.	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
P-2	.	.	.	.	.	.	.	.	.	.	.
BR120	.	.	.	.	.	.	.	.	.	.	.
OB-103A	34.29	1.24	0.02	6.60	2.31	6.96	159.96	24.90	234.75	34.86	27.08
OB-103B	.	.	.	.	.	.	.	.	.	.	.
OB-105A	.	.	.	.	.	.	.	.	.	.	.
OB-105B	23.90	0.43	0.01	3.44	0.00	1.22	75.26	8.39	130.25	19.70	10.36
OB-105C	41.82	1.12	0.02	9.29	3.45	8.48	90.81	25.84	450.85	78.78	34.34
OB-105D	.	.	.	.	.	.	.	.	.	.	.
OB-105E	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-105F	OB-105	FPS-1	33.965	77.491	6.25	6.50	29.2	11.57	20.90	35.50	0.75	1.04
OB-105G	OB-105	FPS-1	33.965	77.491	7.25	7.50	29.2	4.38	18.20	47.00	0.51	1.24
OB-107A	OB-107	FPS-6	33.773	77.480	0.50	0.75	28.9	1.19	7.07	39.40	5.18	4.24
OB-107B	OB-107	FPS-6	33.773	77.480	1.50	1.75	28.9	1.30	1.96	48.70	2.65	4.80
OB-107C	OB-107	FPS-6	33.773	77.480	2.50	2.75	28.9	1.46	3.13	45.50	2.81	4.54
OB-108A	OB-108	BBS-5	34.455	76.848	2.25	2.50	20.4	0.47	21.00	40.50	2.82	1.49
OB-108B	OB-108	BBS-5	34.455	76.848	3.25	3.50	20.4	0.49	14.70	46.00	2.11	1.92
OB-108C	OB-108	BBS-5	34.455	76.848	4.25	4.50	20.4	0.39	26.20	39.60	1.32	0.38
OB-108D	OB-108	BBS-5	34.455	76.848	5.75	6.00	20.4	0.34	30.00	28.00	1.19	0.32

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
OB-105F	2.75	1.30	0.91	0.67	0.03	75.47	44	151	.	.	.	.	.	0.18	269.65	34.43
OB-105G	2.76	0.90	0.92	0.98	0.04	77.01	54	79	.	.	.	.	.	.	.	.
OB-107A	9.83	1.90	2.20	0.68	0.06	71.82	42	132	.	.	.	.	.	0.39	113.19	98.43
OB-107B	10.88	2.00	2.22	0.72	0.06	75.37	45	134	.	.	.	.	.	0.44	127.97	111.78
OB-107C	10.47	2.10	2.03	0.70	0.06	72.88	44	156	.	.	.	.	.	0.41	122.26	109.84
OB-108A	3.30	1.40	0.89	0.21	0.03	72.11	16	41	.	.	.	.	.	.	.	.
OB-108B	4.41	1.90	0.92	0.40	1.40	74.30	23	50	.	.	.	.	.	0.19	142.92	40.14
OB-108C	1.46	0.60	0.56	0.08	0.01	70.60	19	13	.	.	.	.	.	0.03	23.29	9.35
OB-108D	1.19	0.50	0.41	0.07	0.02	62.04	7	14	.	.	.	.	.	.	.	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-105F	20.64	0.40	0.01	6.59	0.10	0.71	83.78	8.22	530.21	76.24	18.83
OB-105G	.	.	.	.	.	.	.	.	.	.	.
OB-107A	60.70	3.45	0.01	4.48	0.52	16.08	381.87	73.48	222.83	48.82	7.26
OB-107B	82.60	3.94	0.01	1.17	0.55	10.58	376.27	85.00	191.48	52.11	9.18
OB-107C	72.18	3.79	0.01	1.88	0.69	9.40	429.88	81.40	230.28	53.84	6.60
OB-108A	.	.	.	.	.	.	.	.	.	.	.
OB-108B	35.62	1.61	0.01	10.04	0.31	15.90	364.57	34.38	404.25	21.74	9.16
OB-108C	5.69	0.32	0.00	25.36	0.34	3.17	112.19	7.25	624.29	10.07	0.00
OB-108D	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MG0 %	FE203 %
OB-109A	OB-109	BBS-2	34.455	76.865	1.50	1.50	21.0	4.11	8.37	70.10	1.52	1.20
OB-109B	OB-109	BBS-2	34.455	76.865	2.50	2.50	21.0	3.41	5.99	67.90	1.51	2.15
OB-109C	OB-109	BBS-2	34.455	76.865	4.00	4.00	21.0	3.15	5.92	65.30	1.49	2.14
OB-109D	OB-109	BBS-2	34.455	76.865	5.50	5.50	21.0	2.89	7.46	64.20	1.58	1.58
OB-109E	OB-109	BBS-1	34.455	76.865	6.00	6.00	21.0	1.17	24.90	27.00	5.63	1.27
OB-111A	OB-111	OBS-4	34.615	76.941	1.75	2.00	15.4	0.38	45.50	0.00	3.34	0.51
OB-111B	OB-111	OBS-4	34.615	76.941	4.50	4.50	15.4	0.42	51.10	1.02	1.03	0.46
OB-111C	OB-111	OBS-3	34.615	76.941	5.00	5.00	15.4	0.29	49.40	0.00	1.03	0.38
OB-113A	OB-113	FPS-1	34.165	77.325	1.25	1.50	24.9	2.72	12.10	45.90	5.37	1.32

SPL NUM	AL203 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	SO3 %	F2 %	C %	CO2 %	TI %	ZR PPM	CR PPM
OB-109A	2.65	0.80	0.84	0.46	0.03	90.11	26	63	.	.	.	.	.	.	.	.
OB-109B	4.51	1.10	1.04	0.55	1.58	89.78	31	67	.	.	.	.	0.34	143.58	47.90	.
OB-109C	4.56	1.00	1.17	0.51	0.04	85.34	31	65	.	.	.	.	0.46	678.90	34.54	.
OB-109D	3.83	0.80	1.11	0.42	0.03	83.93	23	86	.	.	.	.	.	.	.	.
OB-109E	2.94	0.60	0.84	0.30	0.03	64.75	18	46	.	.	.	.	0.15	595.39	20.31	.
OB-111A	0.47	0.60	0.11	0.03	0.02	51.01	7	21	.	.	.	.	0.00	.	1.17	.
OB-111B	0.32	0.70	0.03	0.02	0.40	55.51	10	18	.	.	.	.	.	.	.	.
OB-111C	0.35	0.30	0.08	0.03	0.02	51.97	7	13	.	.	.	.	0.00	37.26	0.92	.
OB-113A	2.80	1.10	1.04	0.81	0.05	73.27	45	80	.	.	.	.	0.36	550.51	55.27	.

SPL NUM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-109A	.	.	.	.	.	.	.	.	.	.	.
OB-109B	47.29	2.04	0.02	5.07	3.42	8.06	178.11	38.27	427.27	63.78	13.64
OB-109C	13.57	1.48	0.01	5.00	3.00	8.88	126.67	29.54	431.81	67.54	41.68
OB-109D	.	.	.	.	.	.	.	.	.	.	.
OB-109E	15.21	1.01	0.01	17.76	0.92	9.12	98.79	21.40	605.35	24.16	35.25
OB-111A	7.39	0.00	0.00	0.00	0.60	422.91	0.05	121.84	0.54	686.61	7.04
OB-111B	.	.	.	.	.	.	.	.	.	.	.
OB-111C	0.00	0.21	0.00	37.01	0.56	2.33	36.48	0.00	1000.67	5.74	0.17
OB-113A	31.27	1.26	0.01	8.67	6.39	7.79	135.82	25.00	502.81	77.09	35.35

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %
OB-113A	OB-113	FPS-1	34.165	77.325	1.25	1.50	24.9	2.72	12.10	45.9	5.37	1.32
OB-113B	OB-113	FPS-1	34.165	77.325	2.75	3.00	24.9	0.93	3.78	65.8	2.47	1.34
OB-113B	OB-113	FPS-1	34.165	77.325	2.75	3.00	24.9	0.93	3.78	65.8	2.47	1.34
OB-113C	OB-113	FPS-1	34.165	77.325	4.25	4.50	24.9	0.80	.	.	2.04	1.85
OB-114A	OB-114	FPS-1	33.645	77.696	6.35	6.60	20.4	7.09	34.40	15.4	2.83	1.27
OB-114B	OB-114	FPS-1	33.645	77.696	7.25	7.50	20.4	9.46	24.90	22.4	2.64	1.10
OB-114C	OB-114	FPS-1	33.645	77.696	8.00	8.20	20.4	11.92	.	.	2.42	1.10
OB-116A	OB-116	FPS-1	33.768	77.591	0.50	0.75	29.4	2.53	23.80	19.5	2.20	2.16
OB-116B	OB-116	FPS-1	33.768	77.591	3.00	3.24	29.4	7.58	22.90	30.5	1.75	1.49

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-113A	2.80	1.10	1.04	0.81	0.05	73.27	45	80	.	.	.	.	.	0.58	502.44
OB-113B	3.99	1.20	1.33	0.98	0.04	81.91	52	61	.	.	.	.	.	0.48	726.30
OB-113B	3.99	1.20	1.33	0.98	0.04	81.91	52	61	.	.	.	.	.	0.57	909.38
OB-113C	4.40	1.30	1.49	1.06	0.05	.	52	56	.	.	.	.	.	.	.
OB-114A	1.96	1.20	0.62	0.24	0.03	65.06	25	99	.	.	.	.	.	0.13	97.38
OB-114B	2.60	1.50	0.50	0.34	0.02	65.50	42	105	.	.	.	.	.	0.19	72.44
OB-114C	2.05	1.50	0.56	0.33	0.03	.	35	147	.	.	.	.	.	0.16	310.45
OB-116A	5.90	2.50	1.60	0.44	1.20	61.83	46	145	.	.	.	.	.	.	.
OB-116B	3.84	1.60	1.15	0.46	0.03	71.32	33	112	.	.	.	.	.	0.21	359.90

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-113A	57.89	38.04	1.23	0.02	12.84	3.63	6.16	240.55	19.20	293.05	58.74	33.15
OB-113B	22.90	49.06	1.03	0.02	2.71	0.78	15.05	89.87	27.68	150.90	34.65	51.46
OB-113B	17.47	45.25	1.41	0.02	2.17	0.67	24.11	104.79	28.11	144.33	37.45	58.60
OB-113C	.	.	.	.	.	.	.	.	.	.	.	.
OB-114A	44.96	17.80	0.95	0.01	27.77	6.02	3.85	201.47	9.02	901.27	129.26	10.20
OB-114B	76.64	28.31	1.07	0.01	22.18	8.38	4.93	278.67	16.14	892.38	170.19	12.16
OB-114C	93.50	77.98	0.88	0.01	20.63	11.24	4.78	248.72	10.30	1123.47	191.52	21.77
OB-116A	.	.	.	.	.	.	.	.	.	.	.	.
OB-116B	69.09	25.38	1.13	0.01	14.91	6.17	3.22	281.66	22.95	914.00	127.85	31.80

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
OB-118A	OB-118	FPS-6	33.870	77.468	3.00	3.25	26.7	1.06	15.90	51.5	1.19	0.83
OB-118B	OB-118	FPS-6	33.870	77.468	4.25	4.50	26.7	1.33	11.00	62.1	0.65	0.90
OB-118C	OB-118	FPS-6	33.870	77.468	5.90	6.10	26.7	1.15	15.20	56.7	0.58	0.89
OB-118D	OB-118	FPS-6	33.870	77.468	8.90	9.10	26.7	1.05	15.10	51.8	0.48	0.78
OB-119A	OB-119	FPS-1	33.843	77.551	3.35	3.60	29.4	4.92	16.20	42.1	1.89	1.97
OB-120A	OB-120	FPS-1	33.795	77.588	4.25	4.50	23.4	8.36	36.40	16.0	1.62	1.84
OB-120B	OB-120	FPS-1	33.795	77.588	5.90	6.10	23.4	15.50	31.40	25.6	1.30	0.94
OB-126A	OB-126	OLIG	33.976	77.500	1.00	1.00	25.6	1.16	8.23	65.8	0.65	1.14
OB-126B	OB-126	OLIG	33.976	77.500	2.00	2.00	25.6	0.48	5.18	69.6	0.56	1.07

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-118A	3.53	1.20	1.11	0.52	0.02	76.95	65	30	.	.	.	.	.	0.34	145.52
OB-118B	3.66	1.30	1.44	0.59	0.04	83.04	31	39	.	.	.	.	.	0.40	320.40
OB-118C	3.40	1.40	1.00	0.60	0.02	80.95	68	35	.	.	.	.	.	0.43	272.21
OB-118D	3.01	1.20	0.83	0.55	0.02	74.86	59	29	.	.	.	.	.	0.36	151.13
OB-119A	5.47	1.70	1.31	0.70	0.04	76.30	51	151	.	.	.	.	.	.	.
OB-120A	2.06	1.10	0.66	0.30	0.02	68.40	57	131	.	.	.	.	.	0.12	129.36
OB-120B	2.32	1.50	0.65	0.41	0.02	79.69	69	173	.	.	.	.	.	0.17	196.69
OB-126A	3.66	1.16	1.30	0.73	0.04	83.87	38	54	.	.	.	.	.	.	.
OB-126B	3.88	1.21	1.26	0.78	0.04	84.06	39	39	.	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-118A	16.20	27.83	0.66	0.01	12.33	0.99	5.68	85.63	19.64	417.55	28.43	10.58
OB-118B	17.34	32.91	0.76	0.01	10.44	1.47	3.42	132.62	22.20	353.86	37.61	18.93
OB-118C	31.51	44.36	0.83	0.01	18.19	1.96	4.75	218.57	22.41	433.57	34.94	14.01
OB-118D	38.88	25.95	0.84	0.02	22.41	0.85	6.33	809.75	18.87	496.87	36.25	8.33
OB-119A	.	.	.	.	.	.	.	.	.	.	.	.
OB-120A	46.72	16.47	1.22	0.01	24.95	5.60	11.19	18.57	9.13	994.04	124.49	20.46
OB-120B	72.71	27.84	0.63	0.01	21.12	13.04	4.41	18.06	9.50	1419.15	210.59	18.55
OB-126A	.	.	.	.	.	.	.	.	.	.	.	.
OB-126B	.	.	.	.	.	.	.	.	.	.	.	.

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	HGO %	FE2O3 %
OB-126C	OB-126	OLIG	33.976	77.500	3.50	3.50	25.6	0.66	7.35	67.9	0.46	0.99
OB-126D	OB-126	OLIG	33.976	77.500	5.00	5.00	25.6	0.44	3.23	81.3	0.03	0.72
OB-126E	OB-126	OLIG	33.976	77.500	7.00	7.00	25.6	0.44	2.46	82.9	0.25	0.68
OB-127A	OB-127	FPS-1	34.006	77.446	1.50	1.75	25.6	11.40	22.60	32.2	3.34	1.48
OB-127B	OB-127	FPS-1	34.006	77.446	3.50	3.75	25.6	8.37	15.60	49.6	1.98	1.14
OB-127C	OB-127	FPS-1	34.006	77.446	5.50	5.75	25.6	2.31	7.21	66.3	0.72	1.88
OB-127D	OB-127	FPS-1	34.006	77.446	7.50	7.75	25.6	1.45	4.73	72.2	0.55	1.12
OB-128A	OB-128	FPS-5	33.996	77.280	1.75	2.00	29.2	1.00	4.66	55.6	2.96	3.14
OB-128B	OB-128	FPS-5	33.996	77.280	5.50	5.75	29.2	0.95	3.54	67.4	1.27	1.97

SPL NUM	AL2O3 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-126C	3.10	0.91	1.21	0.59	0.03	83.20	31	39	.	.	.	.	.	0.44	516.63
OB-126D	2.51	0.65	0.99	0.51	0.02	90.40	59	34	.	.	.	.	.	.	.
OB-126E	2.30	0.72	1.00	0.63	0.03	91.41	30	32	.	.	.	.	.	0.42	170.89
OB-127A	3.17	1.20	0.95	0.56	0.02	76.97	84	127	.	.	.	.	.	0.31	347.98
OB-127B	3.12	1.30	0.78	0.80	0.02	82.78	94	128	.	.	.	.	.	0.51	643.41
OB-127C	4.50	1.20	1.26	1.10	0.05	86.53	56	73	.	.	.	.	.	.	.
OB-127D	3.48	1.10	1.14	0.84	0.04	86.71	41	49	.	.	.	.	.	.	.
OB-128A	8.14	1.60	2.08	0.70	0.03	79.97	91	105	.	.	.	.	.	0.67	251.25
OB-128B	6.45	1.80	1.90	1.10	0.04	86.43	138	65	.	.	.	.	.	1.00	919.38

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-126C	22.93	35.51	0.95	0.01	8.46	1.24	7.68	117.71	20.68	219.47	20.91	28.71
OB-126D	.	.	.	.	.	.	.	.	.	.	.	.
OB-126E	13.47	27.15	0.62	0.01	2.87	0.75	8.98	76.46	17.62	103.73	14.62	8.81
OB-127A	67.85	29.00	1.07	0.01	14.73	8.46	9.33	134.41	18.74	913.98	54.58	24.01
OB-127B	70.44	30.95	0.98	0.02	13.82	10.08	6.60	129.11	18.28	681.01	127.63	40.49
OB-127C	.	.	.	.	.	.	.	.	.	.	.	.
OB-127D	.	.	.	.	.	.	.	.	.	.	.	.
OB-128A	86.04	74.84	3.33	0.02	4.71	1.28	17.67	22.77	58.75	218.45	42.38	17.44
OB-128B	43.84	58.77	2.01	0.03	3.34	1.97	12.47	123.87	38.87	231.02	62.20	49.02

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE2O3 %
OB-131A	OB-131	PLEIS	34.011	77.026	3.00	3.00	34.0	1.48	21.90	45.0	0.93	0.72
OB-131B	OB-131	PLEIS	34.011	77.026	4.50	4.50	34.0	0.81	42.00	12.9	1.20	0.34
OB-131C	OB-131	PLEIS	34.011	77.026	6.59	6.59	34.0	0.06	41.70	15.7	1.08	0.28
OB-132A	OB-132	FPS-1	34.336	77.221	1.50	1.50	22.0	0.44	7.39	66.3	0.61	1.67
OB-132B	OB-132	FPS-1	34.336	77.221	2.00	2.00	22.0	0.37	10.00	61.5	0.55	1.50
OB-132C	OB-132	FPS-1	34.336	77.221	2.50	2.50	22.0	0.81	12.90	58.9	0.71	1.90
OB-132D	OB-132	FPS-1	34.336	77.221	3.00	3.00	22.0	0.27	18.40	51.9	0.52	1.13
OB-132E	OB-132	FPS-1	34.336	77.221	3.50	3.50	22.0	0.36	9.31	66.3	0.40	1.27
OB-132F	OB-132	FPS-1	34.336	77.221	4.10	4.10	22.0	0.34	9.07	66.3	0.37	1.18

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
OB-131A	1.14	0.76	0.39	0.16	0.02	72.50	12	31	.	.	.	.	.	0.07	11.97
OB-131B	0.74	0.64	0.18	0.09	0.54	59.44	10	25	.	.	.	.	.	.	.
OB-131C	0.57	0.36	0.23	0.06	0.01	60.05	20	15	.	.	.	.	.	0.01	86.10
OB-132A	4.22	1.10	1.56	0.92	0.05	84.34	40	56	.	.	.	.	.	0.59	354.14
OB-132B	3.94	1.00	1.48	0.88	0.05	81.32	38	55	.	.	.	.	.	.	.
OB-132C	3.79	1.00	1.26	0.77	0.05	82.09	41	51	.	.	.	.	.	.	.
OB-132D	2.52	0.70	0.66	0.86	0.03	77.01	97	55	.	.	.	.	.	0.52	342.16
OB-132E	3.05	0.80	1.25	1.01	0.04	83.80	42	50	.	.	.	.	.	0.50	714.22
OB-132F	2.87	0.90	1.00	1.03	0.04	83.10	49	48	.	.	.	.	.	0.54	581.39

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
OB-131A	26.38	10.50	0.64	0.00	22.79	1.85	2.49	143.79	5.81	736.38	18.71	7.55
OB-131B	.	.	.	.	.	.	.	.	.	.	.	.
OB-131C	13.03	0.00	0.22	0.00	41.18	0.58	1.07	6.91	2.04	475.63	9.87	4.14
OB-132A	14.95	61.33	1.55	0.02	6.29	0.76	9.33	206.40	27.67	276.58	31.76	23.75
OB-132B	.	.	.	.	.	.	.	.	.	.	.	.
OB-132C	.	.	.	.	.	.	.	.	.	.	.	.
OB-132D	17.93	32.14	0.87	0.02	17.37	0.64	5.75	68.40	17.06	227.75	13.55	18.23
OB-132E	19.87	51.60	0.94	0.02	5.23	0.45	11.12	95.10	19.99	293.02	22.12	40.48
OB-132F	18.02	37.48	0.87	0.02	6.03	0.63	13.19	62.63	17.84	300.45	19.06	31.43

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
ML-2	OBS-1	HOLO	34.436	76.936	0.01	0.01	.	6.59	20.50	.	0.43	1.26
ML-3	OBS-18	HOLO	33.770	77.628	0.01	0.01	.	5.22	23.98	.	0.89	1.45
BR123	OBS-109	HOLO	34.413	76.753	0.00	0.01	24.0	.	.	.	.	.
BR131	OBS-128	HOLO	33.001	76.580	0.00	0.01	40.0	0.52	27.45	.	44.93	0.77
BR132	OBS-133	HOLO	33.998	76.790	0.00	0.01	36.0	1.19	33.78	.	28.92	1.37
BR133	OBS-135	HOLO	34.001	76.875	0.00	0.01	.	0.86	24.90	.	48.60	0.51
BR134	OBS-136	HOLO	33.998	76.915	0.00	0.01	35.0	1.20	19.48	.	57.84	0.78
BR135	OBS-140	HOLO	34.000	77.085	0.00	0.01	32.0	1.78	11.56	.	72.93	0.50
BR136	OBS-141	HOLO	34.000	77.126	0.00	0.01	32.0	1.15	18.11	.	61.55	0.56

SPL NUM	AL203 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
ML-2	0.38	0.54	0.06	.	.	.	.	.	59.60	0.87	0.71	0.38	8.26	.	.
ML-3	0.35	0.71	0.07	.	.	.	.	.	52.30	1.07	0.61	0.36	12.61	.	.
BR123	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR131	1.09	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.
BR132	2.42	.	.	.	.	.	.	.	0.13	.	.	.	.	.	.
BR133	0.72	.	.	.	.	.	.	.	0.11	.	.	.	.	.	.
BR134	0.66	.	.	.	.	.	.	.	0.15	.	.	.	.	.	.
BR135	0.36	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.
BR136	0.66	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-2
ML-3
BR123
BR131
BR132
BR133
BR134
BR135
BR136

CHEMICAL DATA FOR VIBRACORE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MG0 %	FE203 %
BR137	OBS-142	HOLO	34.000	77.166	0.00	0.01	30.5	0.97	12.16	.	70.84	0.43
BR138	OBS-143	HOLO	33.996	77.208	0.00	0.01	30.5	0.88	16.31	.	64.54	0.90
BR139	OBS-144	HOLO	33.998	77.250	0.00	0.01	28.9	0.80	12.62	.	71.22	0.68
BR140	OBS-145	HOLO	34.000	77.291	0.00	0.01	27.4	0.70	10.92	.	72.87	0.57

SPL NUM	AL203 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPH	ZN PPH	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR137	0.46	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.
BR138	0.74	.	.	.	.	.	.	.	0.14	.	.	.	.	.	.
BR139	0.50	.	.	.	.	.	.	.	0.11	.	.	.	.	.	.
BR140	0.48	.	.	.	.	.	.	.	0.11	.	.	.	.	.	.

SPL NUM	CR PPH	V PPM	FE %	MN %	CA %	P %	CO PPH	BR %	RB PPH	SR PPM	Y PPM	MO PPH
BR137
BR138
BR139
BR140

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CHEMICAL DATA FOR SURFACE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	MGO %	FE203 %
ML-2	OBS-1	HOLO	34.436	76.936	0.01	0.01	.	6.59	20.50	.	0.43	1.26
ML-3	OBS-18	HOLO	33.770	77.628	0.01	0.01	.	5.22	23.98	.	0.89	1.45
BR123	OBS-109	HOLO	34.413	76.753	0.00	0.01	24.0	.	.	.	.	.
BR131	OBS-128	HOLO	33.001	76.580	0.00	0.01	40.0	0.52	27.45	.	44.93	0.77
BR132	OBS-133	HOLO	33.998	76.790	0.00	0.01	36.0	1.19	33.78	.	28.92	1.37
BR133	OBS-135	HOLO	34.001	76.875	0.00	0.01	.	0.86	24.90	.	48.60	0.51
BR134	OBS-136	HOLO	33.998	76.915	0.00	0.01	35.0	1.20	19.48	.	57.84	0.78
BR135	OBS-140	HOLO	34.000	77.085	0.00	0.01	32.0	1.78	11.56	.	72.93	0.50
BR136	OBS-141	HOLO	34.000	77.126	0.00	0.01	32.0	1.15	18.11	.	61.55	0.56

SPL NUM	AL2O3 %	NA2O %	K2O %	TIO2 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
ML-2	0.38	0.54	0.06	.	.	.	.	.	59.60	0.87	0.71	0.38	8.26	.	.
ML-3	0.35	0.71	0.07	.	.	.	.	.	52.30	1.07	0.61	0.36	12.61	.	.
BR123	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR131	1.09	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.
BR132	2.42	.	.	.	.	.	.	.	0.13	.	.	.	.	.	.
BR133	0.72	.	.	.	.	.	.	.	0.11	.	.	.	.	.	.
BR134	0.66	.	.	.	.	.	.	.	0.15	.	.	.	.	.	.
BR135	0.36	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.
BR136	0.66	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
ML-2
ML-3
BR123
BR131
BR132
BR133
BR134
BR135
BR136

CHEMICAL DATA FOR SURFACE BULK-SEDIMENT SAMPLES

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH (M)	BOT DEPTH (M)	H2ODEPTH (M)	P205 %	CAO %	SI02 %	H60 %	FE203 %
BR137	OBS-142	HOLO	34.000	77.166	0.00	0.01	30.5	0.97	12.16	.	70.84	0.43
BR138	OBS-143	HOLO	33.996	77.208	0.00	0.01	30.5	0.88	16.31	.	64.54	0.90
BR139	OBS-144	HOLO	33.998	77.250	0.00	0.01	28.9	0.80	12.62	.	71.22	0.68
BR140	OBS-145	HOLO	34.000	77.291	0.00	0.01	27.4	0.70	10.92	.	72.87	0.57

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	CU PPM	ZN PPM	INSOL %	S03 %	F2 %	C %	CO2 %	TI %	ZR PPM
BR137	0.46	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.
BR138	0.74	.	.	.	.	.	.	.	0.14	.	.	.	.	.	.
BR139	0.50	.	.	.	.	.	.	.	0.11	.	.	.	.	.	.
BR140	0.48	.	.	.	.	.	.	.	0.11	.	.	.	.	.	.

SPL NUM	CR PPM	V PPM	FE %	MN %	CA %	P %	CO PPM	BR %	RB PPM	SR PPM	Y PPM	MO PPM
BR137
BR138
BR139
BR140

CHEMICAL DATA FOR SURFACE BULK-SEDIMENT SAMPLES FROM THE ARCHIVES

This file contains chemical analyses on a suite of surface samples that were collected with a SHIPEK grab sampler in 1965 by O. H. Pilkey and in 1966 by S. R. Riggs. All of the samples are Holocene sediments from the general Frying Pan phosphate district in Onslow Bay. However, since these samples were collected utilizing Loran A navigational systems, there is a major inherent error in their geographic location. Also, these surficial samples display generally low phosphate concentrations as compared to the phosphate concentrations of the underlying Miocene sediments. This demonstrates that the phosphate has been reworked from these Miocene phosphate-rich beds and has been significantly diluted by continental shelf sediments including quartz sand, modern shell hash, and eroded lithoclasts from adjacent hardbottoms.

Chemical analyses were done by International Minerals and Chemical Corp., Bartow, Florida, using standard wet chemical procedures utilized by the phosphate industry on phosphate concentrates and as outlined by the Association of Florida Phosphate Chemists (1980). Analytical numbers are not adjusted for percent insoluble residue.

Column 1: SPL NUM

3 Onslow Bay surface sample number 3

Samples numbered 3 through 51 were collected by S. R. Riggs; the others were collected by O. H. Pilkey.

Column 2: LAT

Location in decimal degrees is derived by calculation from Loran A navigational system. Thus, there is a major inherent error in the locations for these samples.

Column 3: LONG

Location in decimal degrees is derived by calculation from Loran A navigational system. Thus, there is a major inherent error in the locations for these samples.

Column 4: H2ODEPTH

Depth of water in meters to sediment-water interface at sample site. Since all samples were obtained from a SHIPEK grab sampler, the sample depth is the same as water depth. There is a variability in these numbers that is a function of the tide, type of fathometer utilized, correction for transducer location on ship, etc.

Columns 5 and 6: CHEMICAL DATA

P2O5 %	P ₂ O ₅ percent
INSOL %	Insoluble residue in percent

CHEMICAL DATA FOR SURFACE BULK-SEDIMENT SAMPLES

SPL NUM	LAT	LONG	H2ODEPTH (M)	P205 %	INSOL %
3	33.906	77.578	22.9	3.75	.
10	33.847	77.628	23.2	4.80	.
29	33.743	77.705	22.7	1.18	.
30	33.732	77.692	21.3	7.81	.
31	33.728	77.670	21.9	3.15	.
32	33.722	77.647	21.9	8.90	.
36	33.735	77.606	19.8	4.55	.
37	33.742	77.627	18.9	7.17	.
42	33.758	77.663	19.8	4.55	.
43	33.747	77.663	19.8	4.70	.
46	33.790	77.612	20.4	5.36	.
47	33.815	77.613	22.7	4.37	.
48	33.828	77.600	24.3	3.81	.
49	33.818	77.622	22.7	7.95	.
51	33.805	77.622	22.7	3.39	.
166	33.680	77.458	.	0.32	.
166	33.680	77.458	.	0.32	.
167	33.862	77.758	.	0.38	.
167	33.862	77.758	.	0.38	.
172	33.908	77.730	.	0.49	.
176	33.930	77.708	.	0.81	.
182	33.780	77.722	.	0.42	.
188	33.713	77.662	.	6.81	.
947	33.580	77.625	.	2.76	.
948	33.578	77.665	.	0.12	.
1170	34.001	77.443	.	0.72	.
1171	33.945	77.501	.	0.83	.
1172	33.878	77.550	.	0.60	.
1176	33.744	77.340	.	1.93	61.8
1177	33.725	77.642	.	7.02	53.1
1179	33.710	77.670	.	1.46	.
1180	33.710	77.677	.	6.94	53.3
1181	33.675	77.683	.	4.17	58.6
1182	33.770	77.675	.	1.33	.
1183	33.806	77.705	.	0.54	.
1184	33.663	77.717	.	1.90	53.1
1185	33.695	77.720	.	1.06	.
1186	33.710	77.725	.	1.54	69.7
1187	33.755	77.730	.	0.62	.
1188	33.755	77.720	.	1.80	.
1189	33.755	77.730	.	7.11	.

CHEMICAL DATA FOR SURFACE BULK-SEDIMENT SAMPLES

SPL NUM	LAT	LONG	H2ODEPTH (M)	P205 %	INSOL %
1190	33.705	77.670	.	3.22	.
1191	33.683	77.642	.	3.71	46.3
1193	33.662	77.620	.	0.76	.
1194	33.638	77.585	.	1.06	.
1195	33.618	77.575	.	1.27	73.5
1196	33.600	77.538	.	2.79	57.3
1197	33.650	77.580	.	0.73	.
1198	33.650	77.609	.	0.96	61.8
1199	33.720	77.625	.	1.63	.
1200	33.745	77.650	.	6.74	48.0
1202	33.760	77.650	.	4.65	66.2
1203	33.785	77.675	.	1.29	.
1204	33.825	77.692	.	0.70	.
1205	33.810	77.695	.	1.21	.
1206	33.780	77.663	.	5.51	.
1207	33.760	77.626	.	3.49	.
1208	33.730	77.580	.	1.66	.
1209	33.700	77.642	.	1.23	.
1210	33.758	77.592	.	1.17	.
1211	33.908	77.642	.	8.88	.
1212	33.908	77.642	.	0.49	.
1213	33.942	77.770	.	0.53	.
1214	33.920	77.580	.	0.64	.
1215	33.880	77.492	.	1.06	.
1216	33.850	77.392	.	0.59	.
1217	33.830	77.280	.	0.50	.
1221	33.920	77.298	.	0.50	.
1222	33.637	77.392	.	0.55	.
1223	34.002	77.477	.	0.27	.

BBS-4
BBS-3
BBS-2
BBS-1
Onslow Bay Sequences
OBS-U (Undifferentiated)*
OBS-4
OBS-3
OBS-2
OBS-1
Frying Pan Sequences
FPS-6
FPS-5
FPS-4
FPS-3
FPS-2
FPS-1

* Where data are insufficient to identify the specific OBS sequence, it is listed as "OBS-U".

Column 4: TOP DEPTH

Depth in meters in vibracore below sediment-water interface to top of bulk-sediment sample.

Column 5: BOT DEPTH

Depth in meters in vibracore below sediment-water interface to bottom of bulk-sediment sample. If bottom depth is blank or the same as top depth, it is a spot sample that is from that location within the core.

Column 6: OC1

Percent organic carbon of total sample by weight; Martens and Snyder lab.

Column 7: N

Percent nitrogen of total sample by weight; Martens and Snyder labs.

Column 8: C/N ELE

Carbon/nitrogen elemental ratio; Martens and Snyder labs.

Column 9: OC2

Percent organic carbon of total sample by weight; Snyder lab.

Column 10: INOGC

Percent inorganic carbon of total sample by weight; Snyder lab.

Column 11: OC3

Percent organic carbon of total sample by weight; Martens lab.

Column 12: C13M

Stable carbon isotopic ratios relative to PDB; Martens lab.

Column 13: C13SH

Stable carbon isotopic ratios relative to PDB; Showers lab.

ORGANIC DATA FOR BULK-SEDIMENT SAMPLES

HOLE	SPL NUM	UNIT	TOP DEPTH (M)	BOT DEPTH (M)	OC1 %	N %	C/N ELE	OC2 %	INOGC %	OC3 %	C13M	C13SH
OB-1	OB1A	BBS-8	3.75	4.00	0.313	0.023	13.158	.	.	.	.	.
OB-1	OB1A	BBS-8	3.75	4.00	0.317	0.026	12.465	.	.	.	.	.
OB-1	OB1B	BBS-8	4.75	5.00	0.331	0.021	15.220	.	.	.	.	.
OB-1	OB1B	BBS-8	4.75	5.00	0.323	0.022	14.634	.	.	.	.	.
OB-1	OB1C	BBS-8	5.75	6.00	0.611	0.038	16.319	.	.	.	.	.
OB-1	OB1C	BBS-8	5.75	6.00	0.596	0.038	16.077	.	.	.	.	.
OB-1	OB1C	BBS-8	5.75	6.00	0.600	0.038	16.206	.	.	.	.	.
OB-1	OB1C	BBS-8	5.75	6.00	0.631	0.039	16.345	.	.	.	.	.
OB-1	OB1D	BBS-8	6.75	7.00	0.500	0.031	16.248	.	.	.	.	.
OB-1	OB1D	BBS-8	6.75	7.00	0.500	0.032	15.650	.	.	.	.	.
OB-1	OB1D	BBS-8	6.75	7.00	0.513	0.031	16.591	.	.	.	.	.
OB-1	OB1D	BBS-8	6.75	7.00	0.507	0.031	16.376	.	.	.	.	.
OB-1	OB1E	BBS-8	7.75	8.00	0.542	0.033	16.303	.	.	.	.	.
OB-1	OB1E	BBS-8	7.75	8.00	0.547	0.034	16.055	.	.	.	.	.
OB-1	OB1E	BBS-8	7.75	8.00	0.573	0.036	16.034	.	.	.	.	.
OB-1	OB1E	BBS-8	7.75	8.00	0.551	0.034	15.860	.	.	.	.	.
OB-1	OB1F	BBS-8	8.75	9.00	0.702	0.037	19.470	.	.	.	.	.
OB-1	OB1F	BBS-8	8.75	9.00	0.683	0.034	19.967	.	.	.	.	.
OB-1	OB1F	BBS-8	8.75	9.00	0.713	0.036	19.874	.	.	.	.	.
OB-1	OB1F	BBS-8	8.75	9.00	0.678	0.035	19.211	.	.	.	.	.
OB-2	OB2A	BBS-1	3.25	3.50	0.743	0.040	18.624	.	.	.	.	.
OB-2	OB2B	BBS-1	6.25	6.50	0.955	0.044	21.454	.	.	.	.	.
OB-6B	OB6BA	BBS-1	3.00	3.25	1.264	0.061	20.989	.	.	.	.	.
OB-6B	OB6BB	BBS-1	6.50	6.50	0.383	0.018	20.403	.	.	.	.	.
OB-6B	OB6BC	BBS-1	7.00	7.00	0.414	0.019	21.029	.	.	.	.	.
OB-9	OB9A	FPS-1	1.75	2.00	1.292	0.069	18.942	.	.	.	.	.
OB-9	OB9B	FPS-1	2.75	3.00	2.395	0.132	18.106	.	.	.	.	.
OB-14	OB14A	FPS-1	1.00	1.25	1.500	0.088	17.415	.	.	.	.	.
OB-14	OB14A	FPS-1	1.00	1.25	1.500	0.088	17.172	.	.	.	.	.
OB-14	OB14B	FPS-1	2.50	2.75	1.600	0.086	17.819	.	.	.	.	.
OB-14	OB14C	FPS-1	4.00	4.25	1.800	0.092	19.034	.	.	.	.	.
OB-17	OB17A	OBS-U	3.00	3.25	2.122	0.118	18.110	.	.	.	.	.
OB-17	OB17B	OBS-U	5.75	6.00	1.756	0.096	18.276	.	.	.	.	.
OB-22	OB22A	FPS-1	3.25	3.50	2.159	0.123	17.688	.	.	.	.	.
OB-22	OB22B	FPS-1	5.25	5.50	2.119	0.122	17.358	.	.	.	.	.
OB-24	OB24A	FPS-1	0.30	0.50	0.932	0.056	16.434	.	.	.	.	.
OB-24	OB24B	FPS-1	1.00	1.25	1.217	0.065	18.658	.	.	.	.	.
OB-26	OB26A	FPS-1	0.25	0.50	1.765	0.098	17.964	.	.	.	.	.
OB-26	OB26B	FPS-1	1.25	1.50	1.762	0.100	17.707	.	.	.	.	.
OB-26	OB26C	FPS-1	2.75	3.00	1.822	0.099	18.454	.	.	.	.	.

ORGANIC DATA FOR BULK-SEDIMENT SAMPLES

HOLE	SPL NUM	UNIT	TOP DEPTH (M)	BOT DEPTH (M)	OC1 %	N %	C/N ELE	OC2 %	INOGC %	OC3 %	C13M	C13SH
OB-27	OB27A	FPS-2	1.25	1.50	1.695	0.103	16.427	.	.	.	.	.
OB-27	OB27B	FPS-2	7.25	7.50	1.746	0.102	17.051	.	.	.	.	.
OB-28	OB28A	FPS-2	1.00	1.25	2.210	0.127	17.327	.	.	.	.	.
OB-28	OB28B	FPS-2	2.00	2.27	1.840	0.108	17.157	.	.	.	.	.
OB-28	OB28C	FPS-2	3.00	3.25	2.100	0.126	16.666	.	.	.	.	.
OB-29B	OB29BA	FPS-2	0.25	0.50	1.800	0.113	16.394	.	.	.	.	.
OB-29B	OB29BB	FPS-2	3.00	3.25	1.500	0.085	17.283	.	.	.	.	.
OB-29B	OB29BC	FPS-2	6.00	6.25	1.400	0.086	17.166	.	.	.	.	.
OB-33	OB33A	OBS-4	0.50	0.75	0.112	0.003	39.408	.	.	.	.	.
OB-33	OB33B	OBS-4	4.50	4.75	0.162	0.014	11.325	.	.	.	.	.
OB-33	OB33C	OBS-3	6.50	6.75	0.503	0.033	15.211	.	.	.	.	.
OB-33	OB33D	OBS-3	8.25	8.50	0.907	0.061	15.021	.	.	.	.	.
OB-34	OB34A	OBS-1	3.75	4.00	1.001	0.054	18.482	.	.	.	.	.
OB-34	OB34B	OBS-1	5.75	6.00	1.113	0.064	17.275	.	.	.	.	.
OB-34	OB34C	OBS-1	6.75	7.00	1.192	0.067	17.741	.	.	.	.	.
OB-35	OB35A	OBS-1	0.90	1.15	0.441	0.029	15.391	.	.	.	.	.
OB-35	OB35B	OBS-1	1.75	2.00	0.827	0.053	15.338	.	.	.	.	.
OB-35	OB35C	OBS-1	3.75	4.00	0.688	0.043	15.338	.	.	.	.	.
OB-35	OB35D	OBS-1	5.75	6.00	0.582	0.032	18.146	.	.	.	.	.
OB-35	OB35E	OBS-1	7.20	7.50	0.620	0.033	18.710	.	.	.	.	.
OB-37	OB37A	FPS-5	1.50	1.75	0.375	0.016	23.321	.	.	.	.	.
OB-37	OB37B	FPS-5	4.75	5.00	0.237	0.010	21.834	.	.	.	.	.
OB-37	OB37C	FPS-4	8.00	8.25	0.115	0.000	.	.	.	.	.	.
OB-38	OB38A	OBS-2	0.25	0.50	0.216	0.018	11.638	.	.	.	.	.
OB-38	OB38B	OBS-2	1.50	1.80	0.481	0.030	16.357	.	.	.	.	.
OB-38	OB38C	OBS-1	2.25	2.50	0.391	0.030	13.072	.	.	.	.	.
OB-38	OB38D	OBS-1	3.75	4.00	0.485	0.029	16.645	.	.	.	.	.
OB-38	OB38E	OBS-1	5.75	6.00	0.170	9.010	16.758	.	.	.	.	.
OB-38	OB38F	OBS-1	8.46	8.46	0.943	0.053	17.676	.	.	.	.	.
OB-39	OB39A	OBS-2	8.75	9.00	0.262	0.019	14.208	.	.	.	.	.
OB-42	OB42A	BBS-1	5.25	5.50	1.298	0.064	20.454	.	.	.	.	.
OB-42	OB42B	BBS-1	6.25	6.50	1.750	0.087	20.276	.	.	.	.	.
OB-43	OB43A	BBS-1	1.00	1.25	1.321	0.075	17.836	.	.	.	.	.
OB-43	OB43B	BBS-1	2.00	2.25	1.470	0.080	18.338	.	.	.	.	.
OB-43	OB43C	BBS-1	3.50	3.75	2.159	0.117	18.478	.	.	.	.	.
OB-43	OB43D	BBS-1	4.25	4.50	2.226	0.116	19.129	.	.	.	.	.
OB-45	OB45A	FPS-6	0.75	1.00	0.311	0.025	12.704	.	.	.	.	.
OB-45	OB45B	FPS-6	3.00	3.25	0.303	0.020	15.318	.	.	.	.	.
OB-45	OB45C	FPS-6	4.75	5.00	0.204	0.014	14.976	.	.	.	.	.
OB-47	OB47A	FPS-2	0.00	0.25	0.829	0.046	18.083	.	.	.	.	.

ORGANIC DATA FOR BULK-SEDIMENT SAMPLES

HOLE	SPL NUM	UNIT	TOP DEPTH (M)	BOT DEPTH (M)	OC1 %	N %	C/N ELE	OC2 %	INOCG %	OC3 %	C13M	C13SH
OB-47	OB47B	FPS-2	2.00	2.25	0.626	0.038	16.526	.	.	.	.	.
OB-47	OB47C	FPS-2	4.25	4.50	1.064	0.058	18.073	.	.	.	.	.
OB-47	OB47D	FPS-2	5.50	5.75	0.980	0.052	18.884	.	.	.	.	.
OB-47	OB47E	FPS-1	7.50	7.75	1.778	0.098	18.037	.	.	.	.	.
OB-47	OB47F	FPS-1	8.50	8.75	1.561	0.086	18.130	.	.	.	.	.
OB-48	OB48A	FPS-3	0.75	1.00	0.363	0.020	19.090	.	.	.	.	.
OB-48	OB48B	FPS-3	2.25	2.50	0.260	0.015	17.218	.	.	.	.	.
OB-48	OB48C	FPS-3	4.75	5.00	0.233	0.012	18.545	.	.	.	.	.
OB-48	OB48D	FPS-3	6.75	7.00	0.266	0.013	19.605	.	.	.	.	.
OB-49	OB49A	FPS-2	1.00	1.25	0.239	0.017	14.641	.	.	.	.	.
OB-49	OB49B	FPS-2	4.25	4.50	0.121	0.000	.	.	.	.	.	.
OB-49	OB49C	FPS-2	8.75	9.00	0.188	0.011	17.773	.	.	.	.	.
OB-50	OB50A	FPS-6	1.00	1.25	0.241	0.015	15.987	.	.	.	.	.
OB-50	OB50B	FPS-5	2.00	2.25	0.244	0.016	14.929	.	.	.	.	.
OB-50	OB50C	FPS-5	3.75	4.00	0.414	0.027	15.485	.	.	.	.	.
OB-50	OB50C	FPS-5	3.75	4.00	0.406	0.028	14.662	.	.	.	.	.
OB-51	OB51A	OBS-1	2.00	2.25	0.407	0.025	16.471	.	.	.	.	.
OB-51	OB51B	OBS-1	5.00	5.25	0.482	0.029	16.786	.	.	.	.	.
OB-51	OB51C	OBS-1	8.00	8.25	0.434	0.027	16.376	.	.	.	.	.
OB-52	OB52A	BBS-1	2.85	2.85	0.726	0.049	14.816	.	.	.	.	.
OB-52	OB52B	BBS-1	3.75	3.75	0.824	0.053	15.547	.	.	.	.	.
OB-53	OB53A	BBS-2	1.25	1.25	0.565	0.034	16.618	.	.	.	.	.
OB-53	OB53B	BBS-2	2.75	2.75	1.059	0.062	17.081	.	.	.	.	.
OB-53	OB53C	BBS-2	3.30	3.30	1.143	0.068	16.809	.	.	.	.	.
OB-53	OB53D	BBS-2	4.25	4.25	1.191	0.067	17.776	.	.	.	.	.
OB-53	OB53E	BBS-2	4.75	4.75	0.825	0.050	16.500	.	.	.	.	.
OB-53	OB53F	BBS-2	5.25	5.25	0.859	0.048	17.896	.	.	.	.	.
OB-53	OB53G	BBS-2	6.50	6.50	0.815	0.048	16.979	.	.	.	.	.
OB-57	OB57A	FPS-6	1.75	1.75	0.651	0.038	17.132	.	.	.	.	.
OB-57	OB57B	FPS-6	4.00	4.00	0.638	0.038	16.789	.	.	.	.	.
OB-57	OB57C	FPS-5	6.50	6.50	0.911	0.062	14.694	.	.	.	.	.
OB-58	OB58A	OBS-2	3.40	3.40	1.169	0.074	15.797	.	.	.	.	.
OB-58	OB58B	OBS-2	3.70	3.70	0.120	0.000	.	.	.	.	.	.
OB-58	OB58C	OBS-2	4.40	4.40	1.909	0.117	16.316	.	.	.	.	.
OB-59	OB59A	BBS-1	4.75	4.75	0.184	0.000	.	.	.	.	.	.
OB-59	OB59B	BBS-1	6.25	6.25	0.728	0.046	15.826	.	.	.	.	.
OB-59	OB59C	BBS-1	5.89	5.89	0.360	0.026	13.846	.	.	.	.	.
OB-59	OB59D	BBS-1	6.75	6.75	1.232	0.077	16.000	.	.	.	.	.
OB-59	OB59E	BBS-1	7.80	.	0.436	0.027	16.333	.	.	.	.	.
OB-60	OB60A	BBS-3	1.25	.	0.463	0.025	18.450	.	.	.	.	.

ORGANIC DATA FOR BULK-SEDIMENT SAMPLES

HOLE	SPL NUM	UNIT	TOP DEPTH (M)	BOT DEPTH (M)	OC1 %	N %	C/N ELE	OC2 %	INOGC %	OC3 %	C13M	C13SH
OB-60	OB60B	BBS-3	3.50	.	1.054	0.04900	21.308	.	.	.	.	.
OB-62	OB62A	OBS-U	3.25	.	1.470	0.07300	20.012	.	.	.	.	.
OB-62	OB62B	OBS-U	4.25	.	1.861	0.09100	20.380	.	.	.	.	.
OB-63	OB63A	FPS-2	1.25	.	2.024	0.11200	18.103	.	.	.	.	.
OB-63	OB63B	FPS-2	2.25	.	1.325	0.07600	17.354	.	.	.	.	.
OB-63	P7	FPS-2	0.20	0.2	2.230	0.12274	18.168	3.40	1.17	2.12	-21.28	.
OB-64	OB64A	FPS-1	4.00	.	1.924	0.10500	18.372	.	.	.	.	.
OB-64	OB64B	FPS-1	4.50	.	1.931	0.09700	19.934	.	.	.	.	.
OB-64	OB64C	FPS-1	6.00	.	1.964	0.10400	19.030	.	.	.	.	.
OB-64	OB64D	FPS-1	6.35	.	0.156	0.01600	9.988	.	.	.	.	.
OB-64	P14	FPS-1	4.50	4.7	3.660	0.16503	22.180	4.52	0.86	3.07	-21.52	-24.623
OB-65	P13	FPS-2	4.70	4.8	0.850	0.04504	18.870	1.50	0.65	0.94	-21.18	.
OB-66	P23	FPS-3	3.50	3.6	1.040	0.04766	21.820	1.14	0.10	1.11	-20.78	-21.090
OB-67	OB67A	FPS-6	3.25	.	0.463	0.03500	13.341	.	.	.	.	.
OB-67	OB67B	FPS-6	4.75	.	0.485	0.02700	18.129	.	.	.	.	.
OB-67	P12	FPS-6	7.70	7.8	0.510	0.02022	25.220	2.89	2.38	0.65	-22.52	-24.380
OB-67	P8	FPS-6	4.50	4.6	0.330	0.00608	54.280	4.02	3.69	0.41	-22.04	-24.670
OB-68	P4	OBS-3	1.50	1.6	1.750	0.08440	20.730	3.89	2.14	3.14	-20.02	-22.780
OB-68	P9	OBS-2	4.80	4.9	0.520	0.01229	38.760	1.41	0.89	0.99	-21.90	-22.730
OB-70	P1	FPS-2	1.50	1.6	1.260	0.08345	15.100	1.71	0.45	1.72	-21.04	-21.220
OB-71	OB71A	BBS-1	0.50	.	0.765	0.04400	17.236	.	.	.	.	.
OB-71	OB71B	BBS-1	1.00	.	0.873	0.05700	15.054	.	.	.	.	.
OB-72	OB72A	BBS-2	1.00	.	0.724	0.04800	15.106	.	.	.	.	.
OB-72	OB72D	BBS-1	4.50	.	0.977	0.05400	18.019	.	.	.	.	.
OB-72	P10	BBS-1	4.30	.	0.720	0.03507	20.530	7.63	6.91	1.22	-20.95	-23.010
OB-72	P5	BBS-2	1.50	1.6	0.520	0.02092	24.860	1.22	0.70	0.59	-21.19	-23.490
OB-79	P24	BBS-1	4.50	4.6	1.510	0.06254	23.090	1.36	.	1.19	-20.50	-20.625
OB-79	P6	BBS-1	5.90	6.0	1.040	0.05681	18.310	1.09	0.05	1.10	-20.68	-22.770
OB-80	P26	OBS-1	4.90	5.3	0.280	0.00117	683.760	1.93	1.65	0.70	-21.53	-23.779
OB-91	OB91A	BBS-1	3.50	.	0.534	0.03500	15.406	.	.	.	.	.
OB-91	OB91B	BBS-1	6.00	.	0.692	0.03900	17.400	.	.	.	.	.
OB-92	OB92B	BBS-4	4.25	.	0.119	0.01200	9.792	.	.	.	.	.
OB-92	OB92C	BBS-4	5.00	.	0.167	0.01100	15.208	.	.	.	.	.
OB-92	OB92D	BBS-4	5.50	.	0.175	0.01300	14.326	.	.	.	.	.
OB-92	OB92E	BBS-4	6.00	.	0.153	0.00970	15.292	.	.	.	.	.
OB-94	OB94A	BBS-2	0.70	.	1.072	0.05800	18.678	.	.	.	.	.
OB-94	P17	BBS-2	1.00	1.1	0.690	0.01154	59.790	6.32	5.63	0.84	-21.37	-20.831
OB-95	OB95A	BBS-3	1.25	.	0.201	0.01800	10.875	.	.	.	.	.
OB-95	OB95B	BBS-2	2.20	.	0.447	0.02600	17.446	.	.	.	.	.
OB-96	OB96A	FPS-6	2.20	.	0.457	0.02300	19.717	.	.	.	.	.

ORGANIC DATA FOR BULK-SEDIMENT SAMPLES

HOLE	SPL NUM	UNIT	TOP DEPTH (M)	BOT DEPTH (M)	OC1 %	N %	C/N ELE	OC2 %	INOC %	OC3 %	C13M	C13SH
OB-96	OB96B	FPS-6	5.25	.	1.046	0.05700	18.200	.	.	.	.	.
OB-96	P16	FPS-6	2.90	3.0	0.530	0.00998	188.300	3.95	3.45	0.64	-20.91	-24.000
OB-96	P20	FPS-6	1.40	1.5	0.520	0.00739	142.120	7.62	7.10	0.66	-20.62	-21.666
OB-96	P22	FPS-6	4.40	4.5	0.910	0.03672	24.780	2.96	0.05	0.88	-21.38	-23.590
OB-97	P11	FPS-2	2.90	3.0	1.510	0.07638	19.760	1.81	0.30	1.66	-22.08	-24.120
OB-97	P15	FPS-2	4.40	4.5	1.200	0.03268	36.720	4.95	3.75	2.00	-22.54	-23.730
OB-97	P19	FPS-2	5.90	6.0	1.910	0.10715	17.820	2.05	0.14	1.92	-22.09	-22.721
OB-97	P25	FPS-2	1.40	1.5	0.890	0.03940	22.590	1.85	0.96	0.54	-21.19	-22.990
OB-98	OB98A	HOL	1.25	.	2.929	0.15300	19.204	.	.	.	.	.
OB-98	OB98B	FPS-2	3.25	.	2.888	0.16100	17.875	.	.	.	.	.
OB-98	P2	FPS-2	4.00	4.1	4.740	0.26452	17.290	6.92	2.18	5.73	-21.73	.
OB-103	OB103A	FPS-2	5.00	.	0.778	0.04100	18.977	.	.	.	.	.
OB-105	OB105A	FPS-2	1.25	.	1.238	0.06700	18.460	.	.	.	.	.
OB-105	OB105B	FPS-2	2.25	.	1.240	0.06500	19.178	.	.	.	.	.
OB-105	OB105C	FPS-2	3.25	.	1.430	0.07300	19.549	.	.	.	.	.
OB-105	OB105D	FPS-2	4.25	.	1.167	0.06000	19.389	.	.	.	.	.
OB-105	OB105E	FPS-1	5.25	.	1.385	0.07300	18.862	.	.	.	.	.
OB-105	OB105F	FPS-1	6.25	.	1.690	0.09000	18.770	.	.	.	.	.
OB-105	OB105G	FPS-1	7.25	.	0.849	0.04000	21.467	.	.	.	.	.
OB-107	OB107A	FPS-6	0.50	.	1.884	0.09800	19.643	.	.	.	.	.
OB-107	OB107B	FPS-6	1.50	.	0.109	0.10900	17.549	.	.	.	.	.
OB-108	OB108A	BBS-5	2.25	.	0.056	0.95300	16.916	.	.	.	.	.
OB-108	OB108C	BBS-5	4.25	.	0.027	0.24700	8.996	.	.	.	.	.
OB-108	OB108D	BBS-5	5.75	.	0.030	0.22600	7.453	.	.	.	.	.
OB-109	OB109A	BBS-2	1.50	.	0.039	0.62500	15.961	.	.	.	.	.
OB-109	OB109B	BBS-2	2.50	.	0.054	0.85600	15.887	.	.	.	.	.
OB-109	OB109C	BBS-2	4.00	.	0.044	0.71600	16.019	.	.	.	.	.
OB-109	OB109D	BBS-2	5.50	.	0.076	2.03200	26.848	.	.	.	.	.
OB-111	OB111B	OBS-4	4.50	.	0.022	0.11500	4.974	.	.	.	.	.
OB-111	OB111C	OBS-3	5.00	.	0.022	0.08900	4.360	.	.	.	.	.
OB-113	OB113BB	FPS-1	2.75	.	0.039	0.68000	17.538	.	.	.	.	.
OB-113	OB113BC	FPS-1	4.25	.	0.031	0.64300	20.182	.	.	.	.	.
OB-114	OB114A	FPS-1	6.35	.	0.072	1.12600	15.643	.	.	.	.	.
OB-114	OB114B	FPS-1	7.25	.	0.099	1.63400	16.650	.	.	.	.	.
OB-114	OB114C	FPS-1	8.00	.	0.090	1.51900	16.739	.	.	.	.	.
OB-118	OB118A	FPS-6	3.00	.	0.025	0.39500	15.883	.	.	.	.	.
OB-118	OB118B	FPS-6	4.25	.	0.026	0.43800	16.682	.	.	.	.	.
OB-118	OB118C	FPS-6	5.90	.	0.032	0.48600	15.497	.	.	.	.	.
OB-118	OB118D	FPS-6	8.90	.	0.030	0.42000	13.948	.	.	.	.	.

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

This file contains textural data for the SHIPEK surface samples obtained from Onslow Bay during the Onslow Bay Research Project. The key to the data sheets is as follows.

Column 1: SPL NUM

OBS-11 Onslow Bay SHIPEK sample number 11.

Column 2: LAT

Latitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 3: LONG

Longitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 4: H2ODEPTH

Water depth is in meters. There is a variability in these numbers that is a function of the tide, type of fathometer utilized, correction for transducer location on ship, etc.

Column 5: DESCRPTN

Sample description that includes the following abbreviations:

CS	coarse sand
MS	medium sand
FS	fine sand
SH	shell
GV	gravel
M	mud
HG	hardground
GFO	glauconite foram ooze
NONE	no description

Column 6: HRDGRND

Hardground present: Y = yes; N = no.

Column 7: PHOS EST

Visual estimate of concentration of phosphate grains is in volume percent.

Column 8: INTLWGT

Initial weight of sample for textural analysis is in grams.

Columns 9 through 20: PHI(\emptyset)

Weight in grams of sample fraction retained on each screen with the size opening indicated in phi units. Phi (\emptyset) sizes range from -1.0 to 4.0 plus the pan fraction ($<4 \emptyset$) as given below. Dots indicate no textural analysis.

-1.0 \emptyset	2.00	mm
-0.5 \emptyset	1.41	mm
0.0 \emptyset	1.00	mm
0.5 \emptyset	0.71	mm
1.0 \emptyset	0.50	mm
1.5 \emptyset	0.35	mm
2.0 \emptyset	0.25	mm
2.5 \emptyset	0.177	mm
3.0 \emptyset	0.125	mm
3.5 \emptyset	0.088	mm
4.0 \emptyset	0.0625	mm
Pan	< 0.0625	mm

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2DEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-1	34.436	76.936	20.0	MS	N	18	35.00	1.83	0.78	1.06
OBS-2	33.754	77.519	29.0	SHFS	Y	3	35.29	0.58	0.63	0.61
OBS-3	33.756	77.535	29.5	SHMS	N	5	50.40	4.14	1.49	1.16
OBS-4	33.739	77.585	29.0	SHCS	N	5	50.00	3.63	3.33	3.08
OBS-5	33.737	77.570	28.0	SHMS	N	3	50.80	16.83	3.64	2.67
OBS-6	33.777	77.576	26.0	SHMS	N	6	50.30	7.86	3.21	2.85
OBS-7	33.854	77.620	25.5	FS	N	10	51.00	0.41	0.46	0.40
OBS-8	33.856	77.626	24.5	FS	N	10	50.02	0.29	0.19	0.16
OBS-9	33.839	77.654	24.0	SHMS	N	2	50.03	4.35	3.11	3.58
OBS-10	33.729	77.685	22.0	SHCS	N	10	50.03	13.53	13.81	8.31
OBS-11	33.727	77.672	22.0	MS	N	13	50.11	4.85	2.57	3.92
OBS-12	33.724	77.637	24.0	CS	N	5	50.03	6.85	23.96	8.55
OBS-13	33.721	77.626	27.0	SHCS	Y	5	50.02	17.35	8.74	6.70
OBS-14	33.708	77.603	27.0	SHM	Y	3	50.01	7.00	3.09	2.44
OBS-15	33.705	77.580	27.0	SHMS	N	2	50.07	3.33	3.21	2.60
OBS-16	33.727	77.589	25.0	SHMS	N	2	50.06	7.40	3.81	3.74
OBS-17	33.751	77.608	26.0	FS	N	25	.	.	.	.
OBS-18	33.772	77.627	24.0	SHFS	N	17	48.24	0.48	0.71	0.94

SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-1	2.34	4.48	8.76	8.80	4.68	1.88	0.29	0.08	0.01
OBS-2	1.55	2.68	5.57	7.11	7.78	7.15	1.24	0.30	0.05
OBS-3	2.96	5.31	9.09	5.95	3.03	4.27	1.93	0.78	0.25
OBS-4	6.17	7.84	11.26	7.89	4.13	2.23	0.69	0.42	0.08
OBS-5	4.11	4.17	3.31	2.56	3.23	5.81	2.64	1.29	0.40
OBS-6	4.27	5.26	8.17	8.07	6.60	3.36	0.37	0.10	0.05
OBS-7	0.61	0.67	0.97	2.01	7.60	28.44	8.26	0.98	0.14
OBS-8	0.76	1.94	7.23	16.17	13.90	7.94	1.05	0.15	0.03
OBS-9	5.65	7.07	7.95	7.54	5.95	4.00	0.63	0.08	0.04
OBS-10	5.02	2.74	2.66	2.06	1.04	0.42	0.10	0.06	0.07
OBS-11	8.32	9.50	8.66	5.60	3.89	2.33	0.21	0.07	0.03
OBS-12	3.72	2.12	2.28	1.52	0.63	0.11	0.03	0.02	0.02
OBS-13	6.82	4.96	2.98	1.04	0.36	0.27	0.19	0.15	0.10
OBS-14	4.84	6.28	4.88	3.79	2.34	3.08	5.18	6.01	1.12
OBS-15	3.86	4.80	7.50	7.93	8.11	6.93	1.12	0.52	0.13
OBS-16	4.58	6.08	10.37	8.44	3.59	1.68	0.17	0.09	0.05
OBS-17	.	.	.	.	.	.	.	.	.
OBS-18	1.84	2.97	4.32	5.77	10.30	17.07	3.19	0.52	0.04

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2DEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-19	33.778	77.633	24.0	CS	N	10	50.10	1.16	0.86	1.99
OBS-20	33.800	77.650	22.0	CS	N	2	50.09	5.22	10.38	10.28
OBS-21	33.809	77.658	22.0	CS	N	2	50.02	4.24	6.48	8.25
OBS-22	33.831	77.676	23.0	MS	N	1	50.02	3.45	4.63	2.63
OBS-23	33.851	77.685	23.0	MS	N	1	50.01	2.28	1.23	0.62
OBS-24	33.856	77.701	24.0	CS	N	1	50.10	1.57	1.84	3.88
OBS-25	33.870	77.677	23.0	MS	N	1	50.09	0.09	0.21	0.15
OBS-26	33.859	77.653	24.0	CS	N	1	50.06	3.85	1.85	5.80
OBS-27	33.858	77.588	24.0	SHFS	N	5	.	.	.	.
OBS-28	33.870	77.601	27.0	FS	N	10	50.07	0.28	0.30	0.33
OBS-29	33.871	77.574	25.0	FS	N	80	52.96	0.65	0.27	0.30
OBS-30	33.988	77.555	25.5	HG	Y	0	.	.	.	.
OBS-31	33.859	77.537	30.0	MS	N	10	50.01	1.03	0.58	0.78
OBS-32	33.883	77.580	26.0	SHCS	N	1	50.00	22.57	19.13	5.52
OBS-33	33.902	77.604	26.0	SHCS	N	1	50.01	5.32	2.74	2.63
OBS-34	33.924	77.625	22.0	MS	N	1	50.00	6.12	1.40	2.30
OBS-35	33.935	77.636	20.0	MS	N	1	50.00	1.51	0.37	0.93
OBS-36	33.977	77.682	18.0	MS	N	1	50.01	4.61	3.98	5.15

SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-19	12.18	14.12	8.17	6.49	3.66	1.22	0.15	0.08	0.02
OBS-20	5.98	4.62	6.16	4.40	1.92	0.81	0.06	0.02	0.01
OBS-21	8.78	8.00	7.00	4.05	1.85	0.97	0.12	0.04	0.01
OBS-22	3.04	8.16	12.98	5.45	3.99	4.51	0.84	0.19	0.06
OBS-23	1.37	2.44	6.05	12.01	17.02	6.57	0.37	0.06	0.05
OBS-24	8.45	9.75	13.62	5.85	2.85	1.75	0.32	0.13	0.09
OBS-25	0.33	0.83	2.34	8.63	21.87	14.17	1.23	0.15	0.06
OBS-26	19.04	8.53	3.66	3.46	2.53	0.99	0.12	0.03	0.02
OBS-27	.	.	.	.	.	.	.	.	.
OBS-28	0.60	1.48	4.06	9.44	16.39	14.78	1.98	0.31	0.09
OBS-29	0.24	0.34	1.06	11.15	25.74	12.10	2.21	0.16	0.01
OBS-30	.	.	.	.	.	.	.	.	.
OBS-31	1.40	2.75	5.33	8.42	13.07	12.64	3.23	0.11	.
OBS-32	1.39	0.38	0.18	0.09	0.08	0.06	0.03	0.02	0.02
OBS-33	3.42	3.86	4.01	3.89	6.83	12.64	4.00	0.46	0.10
OBS-34	17.26	14.02	4.93	2.33	1.13	0.48	0.05	0.01	0.01
OBS-35	5.85	6.77	9.11	10.80	9.27	4.77	0.45	0.08	0.01
OBS-36	7.42	8.30	6.70	7.12	4.72	1.42	0.10	0.02	0.01

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2DEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-37	33.886	77.671	20.0	SHMS	N	1	50.01	0.16	0.38	0.35
OBS-38	33.853	77.607	26.5	FS	N	13	50.01	0.22	0.22	0.18
OBS-39	33.736	77.726	23.0	CS	N	0	50.01	1.68	14.48	15.55
OBS-40	33.908	77.724	20.0	MS	N	1	50.01	2.13	2.24	1.62
OBS-41	33.770	77.727	21.0	CS	N	4	50.01	1.28	1.19	3.57
OBS-42	33.707	77.677	22.0	MS	N	8	50.60	1.38	0.44	0.91
OBS-43	33.681	77.654	25.0	FS	N	40	54.10	0.10	0.31	0.34
OBS-44	33.659	77.635	22.0	SHFS	N	3	50.08	1.96	1.80	4.39
OBS-45	33.633	77.605	26.0	FS	N	1	50.14	0.04	0.09	0.12
OBS-46	33.621	77.581	26.0	FS	N	1	50.87	0.03	0.07	0.12
OBS-47	33.606	77.553	26.0	SHFS	N	1	50.30	0.24	0.32	0.55
OBS-48	33.555	77.521	27.0	SHCS	N	4	50.25	15.43	12.87	9.73
OBS-49	33.620	77.470	33.0	SHMS	N	1	50.63	10.17	4.78	6.42
OBS-50	33.652	77.456	33.0	SHMS	N	1	50.00	3.68	1.61	1.63
OBS-51	33.704	77.439	28.0	SHCS	N	3	50.13	6.99	2.94	9.92
OBS-52	33.728	77.470	31.0	GVMS	N	0	50.13	13.23	0.64	0.36
OBS-53	33.770	77.470	32.0	SHMS	N	0	50.01	5.40	2.43	2.39
OBS-54	33.757	77.509	25.5	SHMS	N	1	.	.	.	.

SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-37	1.15	1.91	3.58	11.63	22.60	8.35	0.54	0.08	0.03
OBS-38	0.40	0.60	1.52	4.99	12.29	22.77	5.73	0.84	0.23
OBS-39	7.12	4.04	2.72	1.49	0.92	0.85	0.62	0.41	0.10
OBS-40	4.12	4.93	4.97	7.30	12.85	9.49	0.73	0.09	0.04
OBS-41	7.89	9.08	8.72	5.74	2.32	2.32	0.45	0.31	0.06
OBS-42	3.57	6.50	10.10	11.03	10.31	5.24	0.15	0.07	0.01
OBS-43	2.33	4.67	7.30	10.89	16.53	9.43	1.48	0.59	0.03
OBS-44	6.60	7.35	9.48	8.08	6.19	2.75	0.51	0.11	0.03
OBS-45	0.30	0.66	1.69	6.50	19.49	16.69	3.24	0.64	0.06
OBS-46	0.44	0.99	2.36	5.56	19.29	17.82	3.26	0.58	0.07
OBS-47	1.31	1.96	3.43	7.53	23.78	9.22	1.48	0.22	0.02
OBS-48	7.07	3.33	1.00	0.26	0.16	0.08	0.03	0.01	0.03
OBS-49	8.64	7.66	5.45	2.80	2.42	1.05	0.62	0.19	0.08
OBS-50	2.97	5.43	11.00	10.12	5.58	4.23	2.60	0.82	0.07
OBS-51	14.73	10.14	5.63	2.74	0.92	0.29	0.09	0.03	0.01
OBS-52	1.12	4.80	11.21	11.30	5.39	1.31	0.30	0.08	.
OBS-53	3.27	4.35	7.19	8.69	6.70	5.96	2.46	0.76	.
OBS-54	.	.	.	.	.	.	.	.	.

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2DEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-55	34.451	76.673	22.5	FS	N	1	50.14	0.18	0.94	0.81
OBS-56	34.451	76.708	23.0	SHMS	N	1	50.04	0.05	0.12	0.17
OBS-57	34.452	76.733	22.5	FS	N	1	50.06	0.12	0.06	0.19
OBS-58	34.452	76.753	22.5	FS	N	1	50.02	1.16	1.21	2.65
OBS-59	34.454	76.784	21.5	MS	N	1	50.11	0.04	0.14	0.25
OBS-60	34.454	76.875	23.0	SHCS	N	15	50.42	12.42	4.63	2.64
OBS-61	34.451	76.920	24.0	MS	N	3	50.09	0.21	0.31	0.27
OBS-62	34.437	76.955	22.0	MS	N	3	49.65	0.14	0.19	0.21
OBS-63	34.432	76.987	20.0	CS	N	2	49.65	0.29	0.38	1.35
OBS-64	34.426	77.036	20.0	FS	N	1	50.68	0.06	0.08	0.05
OBS-65	34.409	77.080	22.0	MS	N	3	50.06	0.23	0.19	0.16
OBS-66	34.409	76.908	25.0	FS	N	10	50.05	0.41	0.33	0.39
OBS-67	34.379	76.905	26.0	CS	N	3	50.08	0.56	1.31	3.48
OBS-68	34.338	76.901	27.0	SHMS	N	1	50.03	0.04	0.09	0.09
OBS-69	34.320	76.886	25.0	SHMS	N	1	50.01	0.06	0.16	0.25
OBS-70	34.268	76.882	28.0	CS	N	1	50.07	3.17	0.38	1.05
OBS-71	34.250	76.878	29.0	MS	N	1	50.95	0.25	0.38	0.37
OBS-72	34.228	76.875	29.0	MS	N	1	50.24	2.51	1.29	1.87

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SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-55	1.45	2.08	3.79	9.79	20.88	8.83	4.86	2.26	0.82
OBS-56	0.58	1.17	3.43	11.20	19.66	9.29	3.16	1.43	0.12
OBS-57	0.52	1.27	4.89	14.74	19.65	6.11	1.61	.	.
OBS-58	6.23	10.73	10.70	7.72	6.83	2.28	0.30	0.07	0.01
OBS-59	0.76	1.06	2.28	6.85	22.17	15.86	2.56	0.65	0.05
OBS-60	3.11	3.87	4.71	4.29	4.66	4.07	3.47	1.57	0.50
OBS-61	0.59	0.86	2.17	7.68	20.62	12.79	2.62	0.65	0.07
OBS-62	0.37	0.66	1.18	4.90	19.95	18.22	3.23	0.56	0.02
OBS-63	5.68	12.62	15.11	7.62	5.00	1.65	0.10	0.03	0.00
OBS-64	0.12	0.63	7.23	18.10	17.87	5.48	0.45	0.06	0.01
OBS-65	0.32	0.59	1.75	5.13	21.33	18.64	1.68	0.18	0.00
OBS-66	1.75	3.02	5.44	9.45	15.84	9.21	3.25	1.14	0.08
OBS-67	7.17	7.24	9.29	10.59	7.45	2.18	0.48	0.16	0.02
OBS-68	0.35	0.83	12.71	8.33	17.18	13.81	4.89	1.55	0.23
OBS-69	1.48	3.57	8.28	16.09	15.90	3.40	0.50	0.09	0.01
OBS-70	8.70	17.66	10.89	5.34	2.31	0.56	0.11	0.03	0.01
OBS-71	1.11	2.16	5.70	13.20	17.42	7.05	2.01	0.39	0.05
OBS-72	3.62	8.27	12.27	8.92	6.36	1.30	0.39	0.09	0.01

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2ODEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-73	34.236	76.905	29.0	CS	N	3	50.15	0.65	0.10	0.23
OBS-74	34.260	76.936	27.0	SHCS	N	8	50.39	0.97	1.48	3.07
OBS-75	34.269	76.979	27.0	CS	N	3	50.17	0.67	0.39	0.44
OBS-76	34.289	77.010	26.0	SHCS	N	1	50.13	0.40	0.85	1.67
OBS-77	34.308	77.050	26.0	SHCS	N	5	49.53	10.57	4.19	3.89
OBS-78	34.329	77.080	24.0	SHCS	N	3	49.51	0.62	0.51	0.54
OBS-79	34.336	77.106	24.0	MS	N	3	49.30	0.90	1.01	0.95
OBS-80	34.335	77.060	24.0	CS	N	5	49.37	1.80	0.84	1.40
OBS-81	34.335	77.016	26.0	MS	N	3	49.45	0.03	0.13	0.16
OBS-82	34.334	76.985	26.0	SHMS	N	1	50.58	2.86	3.40	4.37
OBS-83	34.331	76.951	27.0	MS	N	10	50.59	0.37	0.58	0.95
OBS-84	34.421	76.671	24.5	MS	N	18	49.83	0.36	0.42	0.64
OBS-85	34.383	76.624	24.5	SHMS	N	1	50.28	0.18	0.15	0.19
OBS-86	34.354	76.670	26.5	SHFS	N	1	50.20	0.23	0.19	0.21
OBS-87	34.302	76.707	28.5	SHMS	N	25	50.72	0.76	0.95	2.05
OBS-88	34.094	77.670	28.5	FS	N	7	50.47	0.04	0.16	0.23
OBS-89	34.209	76.624	31.0	SHCS	N	15	50.15	0.91	1.31	2.07
OBS-90	34.164	76.670	34.0	SHFS	N	10	50.07	0.09	0.10	0.12

SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-73	1.23	1.80	2.93	9.03	22.33	8.57	2.42	0.44	0.07
OBS-74	7.65	9.38	10.50	8.67	6.48	1.26	0.38	0.11	0.02
OBS-75	1.32	2.63	5.18	11.25	20.18	6.11	1.34	0.28	0.03
OBS-76	5.90	8.50	10.14	10.15	9.48	2.24	0.29	0.06	0.01
OBS-77	6.80	6.78	6.13	5.60	3.91	1.16	0.18	0.09	0.05
OBS-78	1.62	4.40	11.08	16.77	10.88	2.32	0.16	0.03	0.01
OBS-79	2.11	4.03	6.44	11.72	15.29	5.48	0.39	0.06	0.01
OBS-80	10.20	16.05	4.09	4.42	7.47	2.38	0.21	0.06	0.02
OBS-81	0.59	2.05	5.34	11.72	20.12	7.53	1.10	0.18	0.01
OBS-82	7.83	8.76	9.21	7.13	4.87	1.45	0.25	0.05	0.01
OBS-83	2.67	6.43	15.06	13.18	8.54	1.75	0.38	0.13	0.01
OBS-84	1.14	2.32	7.33	15.27	15.38	4.60	1.67	0.62	0.04
OBS-85	0.32	0.57	1.28	3.19	7.78	10.57	18.57	5.75	0.95
OBS-86	0.47	0.54	0.72	1.33	2.46	16.67	23.42	6.71	1.16
OBS-87	5.66	10.34	12.88	9.82	6.13	1.41	0.39	0.15	0.02
OBS-88	0.71	1.52	4.09	10.09	23.33	8.39	0.69	0.20	0.03
OBS-89	4.31	6.50	9.29	11.74	9.84	3.22	0.39	0.10	0.01
OBS-90	0.70	1.48	3.00	6.86	10.01	14.75	2.16	0.34	0.05

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H20DEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-91	34.125	76.259	36.3	SHMS	N	43	49.74	1.09	1.03	1.97
OBS-92	34.065	76.671	38.0	SHMS	N	2	49.36	0.33	0.64	1.37
OBS-93	34.063	76.723	36.5	SHMS	N	5	50.44	0.16	0.44	0.87
OBS-94	34.063	76.777	36.5	SHMS	N	10	50.14	0.27	0.74	2.24
OBS-95	34.065	76.831	36.5	SHMS	N	10	50.25	2.72	2.78	5.09
OBS-96	34.063	76.878	33.5	SHMS	N	8	50.48	0.86	2.74	7.63
OBS-97	34.063	76.925	35.0	SHMS	N	5	50.00	2.27	2.50	4.85
OBS-98	34.064	77.000	33.5	SHMS	N	15	48.72	0.02	0.10	0.15
OBS-99	34.104	76.956	33.5	MS	N	7	49.88	0.55	1.16	2.69
OBS-100	34.137	76.922	30.5	SHCS	N	5	49.43	7.69	3.96	3.26
OBS-101	34.166	76.881	31.5	SHMS	N	7	49.04	0.03	0.14	0.21
OBS-102	34.204	76.853	31.5	SHMS	N	3	49.19	0.17	0.29	0.49
OBS-103	34.228	76.826	30.5	SHMS	N	18	49.60	5.81	3.71	5.22
OBS-104	34.260	76.806	30.0	MS	N	23	41.81	4.16	3.69	9.17
OBS-105	34.304	76.836	26.5	SHMS	N	18	49.35	0.24	0.34	0.64
OBS-106	34.114	76.784	26.5	SHMS	N	18	49.30	7.38	3.19	4.95
OBS-107	34.329	76.779	27.0	SHMS	N	38	48.42	0.08	0.18	0.30
OBS-108	34.358	76.773	27.0	SHCS	N	5	49.20	7.46	3.22	3.02

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SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-91	5.39	10.57	13.97	8.52	4.85	1.77	0.28	0.07	0.02
OBS-92	5.54	11.44	13.66	10.89	4.08	1.17	0.11	0.04	0.01
OBS-93	3.32	8.08	13.62	12.84	8.01	2.80	0.27	0.07	0.01
OBS-94	6.72	11.32	12.36	9.85	5.06	1.35	0.19	0.04	0.01
OBS-95	10.34	11.38	9.75	5.91	1.75	0.33	0.06	0.02	0.01
OBS-96	12.01	9.23	7.29	6.46	3.10	0.79	0.17	0.07	0.02
OBS-97	8.74	7.99	8.56	7.96	5.18	1.51	0.28	0.09	0.01
OBS-98	0.53	1.25	3.41	9.84	20.08	11.64	1.45	0.11	0.01
OBS-99	4.96	6.22	10.89	12.78	7.86	2.18	0.34	0.09	0.06
OBS-100	5.37	6.86	8.93	7.32	4.91	1.15	0.19	0.05	0.01
OBS-101	0.47	0.84	2.40	7.20	19.70	13.75	3.27	0.70	0.15
OBS-102	1.79	4.45	9.58	12.61	13.87	4.78	0.87	0.18	0.02
OBS-103	8.75	10.00	7.98	4.55	2.35	0.95	0.13	0.06	0.02
OBS-104	10.45	5.42	4.98	2.34	1.11	0.22	0.09	0.04	0.03
OBS-105	2.44	5.94	11.54	11.53	11.26	4.19	0.90	0.21	0.02
OBS-106	8.85	8.51	6.85	4.79	2.55	1.27	0.54	0.26	0.08
OBS-107	0.84	1.64	3.33	6.44	13.11	13.76	6.18	2.09	0.25
OBS-108	4.70	6.04	6.94	7.00	6.83	2.07	1.16	0.50	0.09

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2DEPTH(M)	DESCRPTN	HRDGRND	PHOS	EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-109	34.408	76.752	24.5	SHCS	N	8	49.55	1.90	3.03	5.86	
OBS-110	34.459	76.734	23.0	FS	N	3	49.28	0.79	0.34	0.34	
OBS-111	34.500	76.725	20.5	FS	N	2	49.00	0.45	0.35	0.45	
OBS-112	34.481	76.674	20.5	FS	N	1	48.32	0.04	0.16	0.16	
OBS-113	34.482	76.622	18.5	FS	N	1	48.62	0.06	0.08	0.09	
OBS-114	34.481	76.553	18.5	FS	N	1	48.24	0.04	0.02	0.06	
OBS-115	34.437	76.574	18.5	FS	N	1	49.25	0.11	0.03	0.04	
OBS-116	34.402	76.489	15.2	MS	N	1	49.33	0.11	0.04	0.07	
OBS-117	34.356	76.555	27.5	SHMS	N	2	49.37	1.35	1.30	1.80	
OBS-118	34.305	76.684	27.5	SHCS	N	3	49.52	1.81	2.18	2.56	
OBS-119	34.268	76.552	32.0	SHFS	N	1	48.78	0.02	0.12	0.19	
OBS-120	34.251	76.489	33.5	MS	N	1	49.22	0.01	0.07	0.07	
OBS-121	34.220	76.202	32.0	SHMS	N	6	49.27	0.00	0.07	0.16	
OBS-122	34.186	76.605	32.0	SHMS	N	1	49.44	0.10	0.10	0.18	
OBS-123	34.138	76.553	36.0	SHFS	N	1	49.58	0.03	0.17	0.25	
OBS-124	34.100	76.488	37.5	SHMS	N	1	49.45	0.41	0.45	0.43	
OBS-125	34.063	76.534	39.0	SHMS	N	5	49.47	0.21	0.24	0.32	
OBS-126	34.030	76.585	39.0	SHMS	N	2	49.21	0.41	0.54	0.95	

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SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-109	10.28	8.43	8.52	6.69	3.55	0.95	0.13	0.07	0.02
OBS-110	0.81	2.73	6.10	8.72	16.85	9.53	2.08	0.68	0.04
OBS-111	0.73	1.06	2.32	3.79	7.94	14.20	14.13	3.29	0.28
OBS-112	0.43	0.75	1.57	3.50	7.98	11.87	16.73	4.54	0.44
OBS-113	0.16	0.29	0.70	2.01	6.32	19.21	15.94	3.12	0.38
OBS-114	0.10	0.16	0.31	1.96	14.21	23.64	6.15	1.18	0.16
OBS-115	0.06	0.09	0.15	1.12	17.39	24.43	4.82	0.81	0.04
OBS-116	0.11	0.12	0.24	3.20	32.20	12.31	0.47	0.06	0.01
OBS-117	3.22	5.40	11.86	11.62	7.54	4.43	1.48	0.32	0.10
OBS-118	4.90	9.21	11.16	9.73	5.86	1.65	0.29	0.08	0.01
OBS-119	0.40	0.64	1.06	2.54	7.22	25.76	9.06	1.42	0.12
OBS-120	0.17	0.38	1.03	3.44	11.83	27.80	3.87	0.33	0.02
OBS-121	0.34	0.91	2.34	5.88	17.38	19.49	2.14	0.26	0.01
OBS-122	0.60	1.16	3.01	9.15	23.53	10.40	0.82	0.09	0.01
OBS-123	1.06	2.68	6.79	12.13	17.16	8.50	0.53	0.05	0.01
OBS-124	0.97	2.09	6.03	16.14	17.36	5.14	0.26	0.03	0.01
OBS-125	0.85	2.36	7.61	15.53	16.38	5.44	0.20	0.02	0.00
OBS-126	2.11	3.71	6.85	11.76	15.20	6.77	0.27	0.03	0.01

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2DEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-127	33.959	76.571	40.0	SHMS	N	2	49.25	0.87	1.55	2.96
OBS-128	33.001	76.579	40.5	SHMS	N	9	49.43	0.70	1.08	2.69
OBS-129	33.989	76.625	40.0	SHMS	N	1	44.97	6.22	4.83	4.10
OBS-130	34.000	76.659	40.0	SHMS	N	1	48.86	0.08	0.11	0.28
OBS-131	34.000	76.705	39.0	SHMS	N	1	48.78	0.51	0.61	2.48
OBS-132	34.000	76.739	38.1	SHCS	N	2	49.34	3.63	3.52	5.40
OBS-133	33.989	76.784	36.5	SHMS	N	1	49.66	12.06	1.39	1.12
OBS-134	34.000	76.830	35.0	SHFS	N	1	49.20	0.25	0.12	0.18
OBS-135	34.001	76.875	35.0	SHFS	N	1	49.36	1.98	1.06	2.35
OBS-136	33.989	76.909	35.0	SHMS	N	4	49.64	6.28	1.59	2.01
OBS-137	33.989	76.954	32.0	SHMS	N	2	49.45	0.37	0.69	0.93
OBS-138	33.988	77.000	32.0	SHMS	N	1	49.26	6.69	1.78	2.60
OBS-139	34.000	77.035	32.0	SHMS	N	1	49.32	1.46	0.61	1.01
OBS-140	34.000	77.081	32.0	SHMS	N	5	49.58	1.98	1.99	2.45
OBS-141	34.000	77.125	32.0	SHMS	N	5	49.13	5.07	2.16	2.35
OBS-142	34.000	77.160	30.5	SHMS	N	3	49.36	0.15	0.30	0.50
OBS-143	33.989	77.205	30.0	SHMS	N	3	49.61	15.72	3.73	3.97
OBS-144	33.989	77.250	30.0	SHCS	N	4	49.57	3.60	4.78	7.02

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SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-127	6.89	9.49	9.65	8.77	7.83	1.16	0.03	0.00	0.01
OBS-128	6.47	9.53	10.73	9.80	6.68	1.79	0.07	0.02	0.01
OBS-129	5.36	5.84	6.27	4.34	4.18	2.77	0.21	0.04	0.08
OBS-130	1.22	3.37	8.30	13.65	13.27	8.08	0.30	0.02	0.00
OBS-131	9.18	11.80	9.94	9.10	3.74	1.30	0.08	0.02	0.02
OBS-132	9.32	8.54	6.85	7.10	4.14	0.62	0.06	0.02	0.02
OBS-133	3.28	10.90	11.27	5.33	2.81	1.32	0.13	0.04	0.04
OBS-134	0.40	0.86	2.62	6.37	17.52	18.50	2.07	0.20	0.01
OBS-135	5.93	9.67	10.67	9.66	5.73	2.19	0.15	0.02	0.01
OBS-136	4.30	10.16	14.93	6.78	2.63	0.76	0.08	0.02	0.01
OBS-137	2.06	4.05	6.69	13.16	15.92	4.96	0.32	0.04	0.01
OBS-138	4.22	5.37	7.61	7.44	7.24	5.36	0.72	0.08	0.06
OBS-139	2.28	5.08	9.21	13.50	10.47	5.04	0.53	0.07	0.03
OBS-140	5.18	10.50	14.41	10.11	2.32	0.50	0.07	0.03	0.01
OBS-141	4.82	8.43	10.35	8.05	5.76	1.75	0.24	0.07	0.03
OBS-142	1.51	2.97	7.68	15.08	15.21	5.10	0.64	0.09	0.01
OBS-143	6.20	6.63	6.39	3.95	2.24	0.68	0.10	0.04	0.02
OBS-144	7.26	5.44	8.48	7.25	4.85	0.75	0.06	0.01	0.01

TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2ODEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-145	34.000	77.205	27.5	MS	N	3	49.40	0.95	2.12	3.99
OBS-146	33.989	77.331	26.0	SHMS	N	2	49.39	0.13	0.14	0.16
OBS-147	34.000	77.375	26.0	SHMS	N	2	49.18	5.25	2.36	2.48
OBS-148	34.007	77.421	24.0	FS	N	7	49.26	0.09	0.16	0.05
OBS-149	34.008	77.457	23.0	FS	N	5	49.38	0.03	0.08	0.05
OBS-150	34.007	77.500	23.0	FS	N	4	49.36	0.10	0.05	0.12
OBS-151	34.008	77.553	21.5	FS	N	3	49.23	0.19	0.18	0.17
OBS-152	34.007	77.623	20.0	CS	Y	1	49.62	11.70	2.20	5.00
OBS-199	33.802	77.605	30.0	SHCS	Y	0	.	.	.	.
OBS-200	33.794	77.554	28.0	SHMS	N	2	.	.	.	.
OBS-201	33.793	77.553	30.0	SHFS	N	13	.	.	.	.
OBS-202	33.769	77.560	30.0	SHCS	N	23	.	.	.	.
OBS-203	33.796	77.561	30.0	SHFS	N	13	.	.	.	.
OBS-204	33.782	77.559	28.0	SHCS	N	3	.	.	.	.
OBS-205	33.853	77.666	25.0	FS	N	3	.	.	.	.
OBS-206	33.852	77.665	28.0	SHCS	Y	1	.	.	.	.
OBS-207	33.849	77.664	26.0	FS	N	3	.	.	.	.
OBS-208	33.846	77.662	24.7	SHMS	N	3	.	.	.	.

SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-145	5.21	6.74	10.85	9.79	6.98	2.35	0.29	0.06	0.01
OBS-146	0.35	0.64	1.55	8.46	26.80	10.23	0.55	0.05	0.00
OBS-147	3.35	3.11	3.44	5.45	14.77	7.86	0.80	0.13	0.05
OBS-148	0.36	0.58	1.30	3.73	16.91	23.18	2.48	0.17	0.01
OBS-149	0.33	0.94	3.53	11.72	21.82	9.93	0.62	0.04	0.00
OBS-150	0.19	0.46	1.58	6.51	23.41	15.30	1.29	0.09	0.00
OBS-151	0.28	0.60	1.59	6.32	22.46	15.47	1.33	0.10	0.01
OBS-152	8.57	5.46	6.33	5.82	3.60	1.26	0.16	0.01	0.02
OBS-199
OBS-200
OBS-201
OBS-202
OBS-203
OBS-204
OBS-205
OBS-206
OBS-207
OBS-208

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TEXTURAL DATA FOR SHIPEK SURFACE SAMPLES

SPL NUM	LAT	LONG	H2ODEPTH(M)	DESCRPTN	HRDGRND	PHOS EST(%)	INTLWGT(G)	PHI -1.0(G)	PHI -0.5(G)	PHI 0.0(G)
OBS-245	33.743	77.547	30.0			.	.	.	.	.
OBS-246	33.091	77.260	283.0	GFO	N	0	.	.	.	.
OBS-247	33.092	77.260	278.0	MS	N	1	.	.	.	.
OBS-248	33.102	77.267	268.0	MS	N	1	.	.	.	.
OBS-249	33.115	77.269	268.0	CS	N	10	.	.	.	.
OBS-250	33.115	77.269	265.0	MS	N	7	.	.	.	.
OBS-251	33.139	77.281	265.5	MS	N	1	.	.	.	.
OBS-252	33.143	77.288	256.0	SHMS	N	3	.	.	.	.
OBS-254	33.175	77.295	195.0	FS	N	0	.	.	.	.
OBS-255	33.188	77.300	171.0	FS	N	0	.	.	.	.

SPL NUM	PHI 0.5(G)	PHI 1.0(G)	PHI 1.5(G)	PHI 2.0(G)	PHI 2.5(G)	PHI 3.0(G)	PHI 3.5(G)	PHI 4.0(G)	PAN(G)
OBS-245
OBS-246
OBS-247
OBS-248
OBS-249
OBS-250
OBS-251
OBS-252
OBS-254
OBS-255

METALLURGICAL ANALYSIS OF PHOSPHATE FROM VIBRACORE SAMPLES

This file contains the detailed metallurgical data obtained for two phosphate samples by the Minerals Research Laboratory, North Carolina State University, Asheville, North Carolina. Sample ML-34 is from unit FPS-1 of the Miocene Pungo River Formation. The sample is from -0.3 to -1.5 meters below the sediment-water interface in vibracore OB-24 (Figure 3). Sample ML-35 is from the Holocene sands that extend from the surface to -1.2 meters below the sediment-water interface in vibracore OB-25 (Figure 3). Both cores are from the Frying Pan phosphate district and represent two very different types of phosphate as indicated by the following chemistry. ML-34 comes from a very rich bed of phosphate that locally crops out on the sea floor in this area or more commonly is overlain by a thin, but variable layer of surficial Holocene sands. Sample ML-35 comes from these latter surface sands and contains highly variable, but lesser amounts of phosphate. All of the phosphate within the Holocene sands (ML-35) has been derived from the erosion of the underlying Miocene bed (ML-34) and has been significantly diluted by continental shelf sediments including quartz sand, modern shell hash, and eroded lithoclasts from adjacent hardbottoms.

The size distribution and double froth flotation analyses were obtained from subsamples of ML-34 and ML-35. Froth flotation analysis utilized a 400-gram subsample. Chemical analyses were done on a bulk-sediment sample, on each size fraction, and the various froth flotation fractions by standard wet chemical procedures utilized by the phosphate industry and as outlined by the Association of Florida Phosphate Chemists (1980). Analytical numbers are not adjusted for percent insoluble residue.

The double-cell froth flotation technique utilized the following reagent levels:

Rougher Flotation

0.52 lb of M28-B fatty acid/ton flotation feed
0.72 lb of #2 fuel oil/ton flotation feed

Cleaner Flotation

0.19 lb of Armac T amine acetate/ton flotation feed
0.19 lb of NaOH/ton flotation feed
0.24 lb of F-65 frother/ton flotation feed

Acid Scrub

5.3 lb H₂SO₄/ton flotation feed

CHEMICAL ANALYSIS OF PHOSPHATE CONCENTRATES FROM METALLURGICAL TESTS

This file contains all analytical data from phosphate concentrates obtained by various phosphate companies that ran metallurgical analyses on bulk samples from Onslow Bay, North Carolina. All initial samples included in this file contained bulk-sediment analyses with greater than 2 percent P_2O_5 . Each laboratory carried out a double-froth flotation separation on approximately 1 kg bulk-sediment samples. The included chemical analyses were performed on the resulting phosphate concentrates.

Column 1: SPL NUM

ML-28 Metallurgical Lab number 28.

Column 2: HOLE

OB-11 Onslow Bay vibracore number 11.

Column 3: UNIT

HOL	Holocene
BBS-8	Bogue Banks Sequence 8 of the Pungo River Formation
BBS-1	Bogue Banks Sequence 1 of the Pungo River Formation
OBS-2	Onslow Bay Sequence 2 of the Pungo River Formation
FPS-6	Frying Pan Sequence 6 of the Pungo River Formation
FPS-2	Frying Pan Sequence 2 of the Pungo River Formation
FPS-1	Frying Pan Sequence 1 of the Pungo River Formation

Column 4: LAT

Latitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 5: LONG

Longitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 6: TOP DEPTH

Depth in core is in meters below sediment-water interface to the top of the sample analyzed.

Column 7: BOT DEPTH

Depth in core is in meters below sediment-water interface to the bottom of the sample analyzed.

Column 8: LAB

Analytical Laboratories	
AGR	Agrico Chemicals Corp., Bartow, FL
GRC	W.R. Grace Inc., Bartow, FL
NCS	North Carolina State University Minerals Research Laboratory, Asheville, NC

Each of the three labs carried out different types of chemical analyses on the samples that they ran. Consequently, each sample has different elements that are included in the following data.

Column 9 through 22

This group of analyses was done using standard wet chemical procedures utilized by the phosphate industry on phosphate concentrates and as outlined by the Association of Florida Phosphate Chemists (1980). Analytical numbers are not adjusted for percent insoluble residue.

P2O5	%	P ₂ O ₅ percent
SIO2	%	SiO ₂ percent
FE2O3	%	Fe ₂ O ₃ percent
AL2O3	%	Al ₂ O ₃ percent
CAO	%	CaO percent
CO2	%	CO ₂ percent
SO3	%	SO ₃ percent
F2	%	F ₂ percent
C	%	C percent
MGO	%	MgO percent
NA2O	%	Na ₂ O percent
K2O	%	K ₂ O percent
FE	%	Fe percent
INSOL	%	Insoluble residue in percent

Columns 23 through 44

This group of analyses was done on four samples (ML-21, ML-26, ML-27, and ML-28) of phosphate concentrate produced by Agrico. The analyses were carried out by Fluorescent X-ray Spectrographic Analytic Laboratory, Denver, Colorado, and utilized X-ray spectrographic techniques. These data, in parts per million, are both qualitative and semi-quantitative.

AG	PPM	Silver parts per million
AS	PPM	Arsenic parts per million
BA	PPM	Barium parts per million
CD	PPM	Cadmium parts per million
CE	PPM	Cerium parts per million
CL	PPM	Chlorine parts per million
CS	PPM	Cesium parts per million
CU	PPM	Copper parts per million
FE	PPM	Iron parts per million
LA	PPM	Lanthanum parts per million
MN	PPM	Manganese parts per million
NI	PPM	Nickel parts per million
PB	PPM	Lead parts per million
RB	PPM	Rubidium parts per million
SB	PPM	Antimony parts per million
SR	PPM	Strontium parts per million
TH	PPM	Thorium parts per million
TI	PPM	Thallium parts per million
U	PPM	Uranium parts per million
Y	PPM	Yttrium parts per million
ZN	PPM	Zinc parts per million
ZR	PPM	Zirconium parts per million

CHEMICAL ANALYSES OF PHOSPHATE CONCENTRATES
FROM METALLURGICAL TESTS

SPL NUM	HOLE	UNIT	LAT	LONG	TOP	BOT	P2O5				SI02			FE2O3			AL2O3			S03			MGO		NA2O		
					DEPTH	DEPTH	LAB	%	%	%	%	CAO	%	CO2	%	%	F2	%	C	%	%	%	%				
ML-4	OB-1	BBS-8	34.640	76.768	6.25	6.75	GRC	25.30	17.80	0.39	0.48	39.66	7.55	2.64	2.98	0.67	0.90	0.95									
ML-5	OB-2B	BBS-1	34.467	76.865	5.25	6.00	GRC	29.10	7.20	0.55	0.73	42.81	28.96	3.27	3.56	0.59	0.61	0.79									
ML-7	OB-6B	BBS-1	34.443	76.943	6.50	7.00	GRC	28.80	8.64	0.73	0.63	44.53	6.71	4.56	3.06	0.65	0.90	0.81									
ML-28	OB-11	FPS-1	33.868	77.578	0.75	1.50	AGR	22.01																			
ML-15	OB-14	FPS-1	33.861	77.565	3.25	3.75	GRC	29.00	4.84	0.20	0.59	46.37	5.30	4.16	3.59	1.48	0.82	0.98									
ML-16	OB-14	FPS-1	33.861	77.565	1.25	1.75	GRC	23.49	12.24	0.19	0.52	42.59	8.84	3.76	2.99	1.34	0.77	0.94									
ML-29	OB-14	FPS-1	33.861	77.565	4.25	4.85	AGR	26.06																			
ML-30	OB-18	HOL	33.728	77.671	0.00	1.00	AGR	13.12																			
ML-18	OB-22	FPS-1	33.763	77.625	3.75	4.50	GRC	23.80	17.84	0.39	0.52	39.50	5.37	4.24	3.15	1.10	0.72	0.95									
ML-11	OB-24	FPS-1	33.780	77.621	0.75	1.50	GRC	28.40	6.80	0.19	0.43	45.69	4.62	4.00	3.16	0.96	0.88	0.99									
ML-34	OB-24	FPS-1	33.780	77.621	0.30	1.50	NCS	27.48																			
ML-35	OB-25	HOL	33.846	77.585	0.00	1.20	NCS	18.06																			
ML-13	OB-26	FPS-1	33.843	77.560	1.75	2.50	GRC	29.10	5.20	0.19	0.47	48.09	4.59	4.20	3.61	1.10	0.96	1.00									
ML-26	OB-26	FPS-1	33.843	77.560	3.25	4.25	AGR	28.42																			
ML-17	OB-27	FPS-2	33.841	77.533	6.25	7.00	GRC	20.20	23.60	0.37	0.73	35.72	5.92	3.48	2.46	1.21	0.72	0.85									
ML-1	OB-29	HOL	33.873	77.535	0.00	0.00	GRC	24.00	5.16	1.31	0.57	46.61	11.59	2.42	3.13	0.57	1.28	0.89									
ML-14	OB-29B	FPS-2	33.873	77.535	3.75	4.25	GRC	27.50	4.40	0.18	0.58	47.40	7.45	4.84	3.57	1.17	0.85	0.99									
ML-27	OB-30	FPS-1	33.916	77.503	1.25	2.00	AGR	29.10																			

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SPL NUM	K2O %	INSOL FE %	AG %	AS PPM	BA PPM	CD PPM	CE PPM	CL PPM	CS PPM	CU PPM	FE PPM	LA PPM	MN PPM	NI PPM	PB PPM	RB PPM	SB PPM	SR PPM	TH PPM	TI PPM	U PPM	Y PPM	ZN PPM	ZR PPM	
ML-4	0.14	.	17.40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-5	0.16	.	6.70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-7	0.17	.	7.30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-28	.	.	24.06	.	12	330	.	180	85	85	38	2400	73	140	66	.	52	.	1700	130	830	.	130	110	130
ML-15	0.09	.	3.90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-16	0.11	.	12.40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-29	.	.	8.08	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-30	.	.	16.66	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-18	0.13	.	18.80	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-11	0.08	.	6.30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-34	.	.	5.00	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-35	.	.	3.00	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-13	0.08	.	4.30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-26	.	.	3.98	.	41	230	.	.	.	.	76	2100	.	120	25	82	.	.	2400	82	660	.	180	140	130
ML-17	0.19	.	26.50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-1	0.14	.	4.40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-14	0.08	.	3.80	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ML-27	.	.	2.73	.	13	240	.	.	.	.	76	2700	.	23	63	71	.	.	2400	.	500	100	200	100	110

CHEMICAL ANALYSIS OF HAND-PICKED CONCENTRATES OF PHOSPHATE GRAIN TYPES

This file contains all analytical data obtained on concentrates of four specific phosphate grain types from Onslow Bay sediment samples. All phosphate concentrate samples were hand-picked using a binocular microscope and based upon the phosphate grain classification scheme of Riggs (1979), Ellington (1984), Mallette (1986), and Riggs and Mallette (1990).

All chemical analyses were done by ICAPES (Inductively Coupled Argon Plasma Emission Spectrometry) by Dr. John T. Bray of the Trace Elements Laboratory, School of Medicine, East Carolina University, Greenville, North Carolina. The samples were digested utilizing a hydrofluoric bomb technique. Concentrations of the digested solutions were determined in ppm of the element. Concentrations of major elements were then converted to percent oxides of the dry material and concentrations of the trace elements were converted to ppm of the dry material. All ICAPES data are quantitative; only the elements with good reproducibility, hence high reliability have been included.

Column 1: SPL NUM

F17	Laboratory identification number
M20	Laboratory identification number
272	Laboratory identification number

Column 2: HOLE

OB-11	Onslow Bay vibracore number 11.
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Column 3: UNIT

HOL	Holocene
PLEIS	Pleistocene undifferentiated
FPS-2	Frying Pan Sequence 2 of the Pungo River Formation
FPS-1	Frying Pan Sequence 1 of the Pungo River Formation
OLIG	Oligocene Silverdale Formation

Column 4: TOP DEPTH

Depth in core is in meters below sediment-water interface to the top of the sample analyzed.

Column 5: BOT DEPTH

Depth in core is in meters below sediment-water interface to the bottom of the sample analyzed.

Column 6: LAT

Latitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 7: LONG

Longitude location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships.

Column 8: H2ODEPTH

Depth of water in meters at the sample site. There is a variability in these numbers that is a function of the tide, type of fathometer utilized, correction for transducer location on ship, etc.

CHEMICAL ANALYSES OF PHOSPHATE CONCENTRATES
FROM METALLURGICAL TESTS

SPL NUM	HOLE	UNIT	LAT	LONG	TOP DEPTH	BOT DEPTH	LAB	P2O5 %	SI02 %	FE2O3 %	AL2O3 %	CAO %	CO2 %	S03 %			MGO NA2O %	
L-188	L-188	HOL	.	.	0.00	0.00	IMC	15.74	.	.	.	46.29	19.20	.	.	.	2.01	.
L-205	L-205	HOL	.	.	0.00	0.00	IMC	16.91	.	.	.	46.10	19.20	.	.	.	1.26	.
L-208	L-208	HOL	.	.	0.00	0.00	IMC	6.66	.	.	.	45.70	29.80	.	.	.	1.94	.
L-925	L-925	HOL	.	.	0.00	0.00	IMC	7.93	.	.	.	43.52	26.44	.	.	.	1.37	.
L-932	L-932	HOL	.	.	0.00	0.00	IMC	7.13	.	.	.	45.31	28.44	.	.	.	1.76	.

SPL NUM	K2O %	INSOL %	AG PPH	AS PPH	BA PPH	CD PPH	CE PPH	CL PPH	CS PPH	CU PPH	FE PPH	LA PPH	MN PPH	NI PPH	PB PPH	RB PPH	SB PPH	SR PPH	TH PPH	TI PPH	U PPH	Y PPH	ZN PPH	ZR PPH	
L-188	. 4.24	5.72	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
L-205	. 2.12	77.57	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
L-208	. 2.94	13.32	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
L-925	. 2.87	15.70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
L-932	. 2.46	13.17	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Column 9: GRAIN TYPE

P Phosphate peloidal grain
S Phosphate skeletal grain
I Phosphate intraclastic grain
M Phosphate microspheritic grain from an unconformity hardground surface

Columns 10 through 19

P2O5 % P₂O₅ percent
CAO % CaO percent
SIO2 % SiO₂ percent
MGO % MgO percent
FE2O3 % Fe₂O₃ percent
AL2O3 % Al₂O₃ percent
NA2O % Na₂O percent
K2O % K₂O percent
TIO2 % TiO₂ percent
MNO % MnO percent

Column 20

SUM Sum of percent oxides analyzed

Column 21 through 31

AS PPM Arsenic parts per million
CD PPM Cadmium parts per million
CO PPM Cobalt parts per million
CR PPM Chromium parts per million
CU PPM Copper parts per million
MO PPM Molybdenum parts per million
NI PPM Nickel parts per million
PB PPM Lead parts per million
SE PPM Selenium parts per million
V PPM Vanadium parts per million
ZN PPM Zinc parts per million

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	HOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %
F03	OB-11	FPS-1	0.75	1.50	33.868	77.578	25.0	S	31.3	52.4	3.40	0.460	0.37
F04	OB-11	FPS-1	0.75	1.50	33.868	77.578	25.0	I	28.0	48.0	8.19	0.600	0.77
F05	OB-11	FPS-1	0.75	1.50	33.868	77.578	25.0	P	30.0	52.4	4.07	0.630	0.45
F06	OB-14	FPS-1	1.25	1.75	33.861	77.565	28.0	S	31.2	53.5	1.82	0.410	0.25
F07	OB-14	FPS-1	1.25	1.75	33.861	77.565	28.0	I	28.2	46.5	5.07	0.710	0.56
F08	OB-14	FPS-1	1.25	1.75	33.861	77.565	28.0	P	29.0	48.5	4.13	0.790	0.37
F09	OB-14	FPS-1	3.25	3.75	33.861	77.565	28.0	S	30.4	49.7	3.13	0.470	0.26
F10	OB-14	FPS-1	3.25	3.75	33.861	77.565	28.0	I	27.7	45.9	7.12	0.631	0.49
F11	OB-14	FPS-1	3.25	3.75	33.861	77.565	28.0	P	28.0	47.1	4.16	0.740	0.38
F12	OB-14	FPS-1	4.25	4.85	33.861	77.565	28.0	S	29.9	51.1	2.62	0.410	0.35
F13	OB-14	FPS-1	4.25	4.85	33.861	77.565	28.0	I	29.2	50.0	6.75	0.600	0.72
F14	OB-14	FPS-1	4.25	4.85	33.861	77.565	28.0	P	28.6	47.0	5.19	0.670	0.47
F15	OB-18	HOL	0.50	0.50	33.728	77.671	24.5	P	29.7	45.6	3.21	0.870	1.59
F16	OB-19	HOL	0.25	0.25	33.728	77.688	23.0	P	28.1	32.8	2.14	0.880	1.68
F17	OB-20	FPS-1	6.00	6.10	33.753	77.613	24.5	P	27.4	45.1	5.37	0.660	0.52
F18	OB-20	FPS-1	6.00	6.10	33.753	77.613	24.5	P	27.3	46.9	5.63	0.690	0.53
F19	OB-20	FPS-1	6.00	6.10	33.753	77.613	24.5	P	28.0	46.0	6.85	0.690	0.55
F20	OB-21	PLEIS	0.25	0.25	33.771	77.626	24.0	P	27.1	43.3	5.14	0.830	1.12

SPL NUM	AL2O3 %	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPH	CD PPH	CO PPH	CR PPH	CU PPH	MO PPH	NI PPH	PB PPH	SE PPH	V PPH	ZN PPH
F03	0.18	1.32	0.047	0.017	0.0030	89.497	1	7	8	48	12	172	9	4	7	11	109
F04	0.71	1.45	0.189	0.086	0.0050	88.000	7	7	8	73	16	161	25	3	7	16	86
F05	0.55	1.50	0.106	0.073	0.0040	89.783	1	7	5	137	16	176	19	7	4	17	121
F06	0.12	1.32	0.033	0.016	0.0030	87.672	1	1	4	52	10	147	11	1	5	9	86
F07	0.49	1.65	0.113	0.056	0.0030	83.352	1	2	4	68	13	77	20	2	2	14	69
F08	0.51	1.81	0.102	0.034	0.0030	85.249	1	6	7	120	17	71	20	10	7	15	114
F09	0.19	1.44	0.045	0.027	0.0030	85.665	1	3	6	60	11	103	14	2	1	13	111
F10	0.60	0.77	0.160	0.071	0.0030	83.445	1	3	7	67	12	75	20	10	2	15	76
F11	0.51	1.61	0.091	0.048	0.0030	82.642	1	5	6	119	15	92	21	4	11	18	102
F12	0.22	1.28	0.059	0.030	0.0040	85.973	1	5	4	48	8	192	10	1	7	10	158
F13	0.83	1.57	0.192	0.090	0.0040	89.956	3	7	6	86	15	175	23	4	1	16	75
F14	0.59	1.45	0.111	0.059	0.0030	84.143	1	6	7	127	14	140	19	1	7	16	102
F15	0.49	1.48	0.107	0.066	0.0070	83.120	99	2	5	131	12	1	12	42	6	16	67
F16	0.49	1.49	0.106	0.070	0.0080	67.764	158	2	5	118	15	1	8	40	4	17	62
F17	0.49	1.51	0.120	0.109	0.0040	81.283	1	6	5	133	18	124	24	41	16	14	103
F18	0.52	1.54	0.121	0.107	0.0040	83.342	1	6	6	137	17	129	26	40	10	14	103
F19	0.52	1.52	0.121	0.121	0.0040	84.376	1	6	5	133	17	135	24	42	11	15	105
F20	0.47	1.47	0.107	0.077	0.0060	79.620	69	1	5	123	16	1	12	42	8	16	66

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	HOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SIO2 %	MGO %	FE2O3 %	AL2O3 %
F21	OB-22	HOL	0.00	0.25	33.763	77.625	26	P	30.1	49.4	3.83	0.73	1.27	0.48
F22	OB-22	HOL	0.00	0.25	33.763	77.625	26	P	29.3	47.4	4.06	0.79	1.05	0.43
F23	OB-22	FPS-1	2.75	3.00	33.763	77.625	26	M	26.8	47.1	9.25	0.88	1.09	1.58
F24	OB-22	FPS-1	2.75	3.00	33.763	77.625	26	S	33.5	51.7	2.36	0.66	0.93	0.07
F25	OB-22	FPS-1	3.00	3.25	33.763	77.625	26	S	30.4	51.7	2.63	0.43	0.52	0.23
F26	OB-22	FPS-1	3.25	3.50	33.763	77.625	26	P	27.4	45.9	6.29	0.69	0.62	0.49
F27	OB-22	FPS-1	3.75	4.50	33.763	77.625	26	P	28.1	46.9	6.16	0.74	0.59	0.50
F28	OB-22	FPS-1	4.75	5.00	33.763	77.625	26	P	26.0	42.5	4.41	0.67	0.52	0.46
F29	OB-23	PLEIS	0.50	0.75	33.815	77.611	26	P	30.1	50.4	4.84	0.93	1.11	0.56
M20	OB-23	PLEIS	0.50	0.75	33.815	77.611	26	P	28.7	47.7	2.38	0.85	1.11	0.53
F30	OB-23	FPS-1	1.75	2.00	33.815	77.611	26	I	27.7	46.8	5.60	0.61	0.50	0.43
F31	OB-23	FPS-1	1.75	2.00	33.815	77.611	26	P	29.1	49.4	4.13	0.77	0.43	0.45
M21	OB-23	FPS-1	1.75	2.00	33.815	77.611	26	P	28.4	46.0	0.32	0.86	0.44	0.43
F32	OB-24	PLEIS	0.30	0.50	33.780	77.621	24	P	28.5	44.1	2.89	0.71	0.48	0.43
F33	OB-24	PLEIS	0.30	0.50	33.780	77.621	24	I	28.2	46.6	3.30	0.67	0.63	0.38
F34	OB-24	FPS-1	0.30	1.50	33.780	77.621	24	P	28.6	49.1	2.35	0.74	0.45	0.44
F35	OB-24	FPS-1	0.30	1.50	33.780	77.621	24	P	28.8	48.9	2.50	0.76	0.49	0.44
F36	OB-24	FPS-1	0.30	1.50	33.780	77.621	24	P	28.4	47.7	2.59	0.75	0.49	0.43

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPM	CD PPM	CO PPM	CR PPM	CU PPM	MO PPM	NI PPM	PB PPM	SE PPM	V PPM	ZN PPM
F21	1.70	0.134	0.079	0.0110	87.734	38	1.000	8	130	22	89	10	13	7	18	48
F22	1.53	0.099	0.080	0.0080	84.747	56	2.000	8	126	22	5	9	12	7	17	54
F23	1.85	0.356	0.126	0.0060	89.038	40	2.000	8	82	7	107	11	19	7	29	33
F24	1.77	0.072	0.004	0.0150	91.081	1	2.000	8	30	3	316	3	5	2	11	40
F25	1.46	0.077	0.027	0.0090	87.483	1	4.000	4	63	55	276	12	17	6	10	97
F26	1.43	0.126	0.131	0.0090	83.086	1	8.000	9	150	19	66	27	9	14	14	147
F27	1.59	0.110	0.115	0.0060	84.811	1	9.000	5	146	16	98	23	1	3	14	107
F28	1.43	0.100	0.102	0.0050	76.197	1	4.000	5	130	16	113	20	34	10	12	80
F29	1.56	0.131	0.067	0.0050	89.703	59	2.000	8	132	17	1	11	16	7	19	63
M20	1.68	0.230	0.117	0.0056	83.333	58	1.000	5	121	12	0	12	4	3	25	62
F30	1.58	0.140	0.050	0.0060	83.416	1	3.000	6	79	81	67	17	20	3	14	97
F31	1.59	0.103	0.460	0.0040	86.437	1	5.000	8	152	53	50	21	19	7	13	104
M21	1.66	0.230	0.043	0.0038	78.427	0	7.000	3	151	32	52	19	15	11	19	110
F32	1.54	0.088	0.043	0.0040	78.785	1	10.000	4	118	28	50	21	42	5	17	138
F33	1.54	0.101	0.044	0.0040	81.469	1	6.000	5	75	42	72	21	49	12	19	105
F34	1.53	0.085	0.047	0.0030	83.345	1	8.000	3	122	13	23	22	28	12	24	146
F35	1.53	0.089	0.049	0.0030	83.561	1	9.000	5	120	13	26	23	35	13	25	148
F36	1.50	0.087	0.045	0.0030	81.995	1	9.000	3	129	13	29	22	34	14	26	147

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	HOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %	AL2O3 %
F37	OB-24	FPS-1	0.30	1.50	33.780	77.621	24.0	I	27.2	44.0	7.07	0.68	0.93	0.70
F38	OB-24	FPS-1	0.30	1.50	33.780	77.621	24.0	I	27.5	45.7	7.66	0.69	0.96	0.71
F39	OB-24	FPS-1	0.30	1.50	33.780	77.621	24.0	I	24.9	43.1	8.21	0.61	0.71	0.66
M17	OB-24	PLEIS	0.30	0.50	33.780	77.621	24.0	P	28.5	47.2	0.49	0.77	0.52	0.40
F40	OB-24	FPS-1	0.75	1.50	33.780	77.621	24.0	M	20.0	39.0	12.77	0.57	1.17	0.86
F41	OB-24	FPS-1	0.75	1.50	33.780	77.621	24.0	M	22.5	44.3	12.77	0.59	0.53	0.93
F42	OB-24	FPS-1	0.75	1.50	33.780	77.621	24.0	S	32.4	54.2	2.56	0.68	0.24	0.10
F43	OB-24	FPS-1	0.75	1.50	33.780	77.621	24.0	I	27.1	46.2	8.96	0.69	0.82	0.67
F44	OB-24	FPS-1	0.75	1.50	33.780	77.621	24.0	P	30.2	48.1	3.94	0.76	0.52	0.46
M18	OB-24	FPS-1	0.75	1.50	33.780	77.621	24.0	P	29.3	48.2	0.95	0.93	0.48	0.37
F45	OB-24	FPS-1	1.50	1.67	33.780	77.621	24.0	S	31.1	48.5	0.88	0.60	0.24	0.12
F46	OB-24	FPS-1	1.50	1.67	33.780	77.621	24.0	P	27.9	46.6	2.21	0.70	0.44	0.43
F47	OB-24	FPS-1	1.50	1.67	33.780	77.621	24.0	P	28.9	47.2	4.68	0.70	0.48	0.44
M19	OB-24	FPS-1	1.50	1.67	33.780	77.621	24.0	P	28.3	47.2	0.00	0.65	0.51	0.42
F48	OB-24	OLIG	1.70	2.70	33.780	77.621	24.0	M	21.8	38.5	12.77	0.43	0.55	1.02
F49	OB-25	HOL	0.50	0.50	33.846	77.585	25.0	P	27.9	46.4	3.19	0.79	1.14	0.51
F50	OB-25	FPS-1	1.25	1.50	33.846	77.585	25.0	P	28.3	47.0	2.55	0.73	0.62	0.46
F51	OB-26	FPS-1	1.75	2.50	33.843	77.560	28.0	S	31.5	52.9	3.14	0.53	0.27	0.16

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SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPM	CD PPM	CO PPM	CR PPM	CU PPM	MO PPM	NI PPM	PB PPM	SE PPM	V PPM	ZN PPM
F37	1.53	0.193	0.084	0.0030	82.390	2	3.000	5	87	12	142	34	39	16	37	85
F38	1.53	0.203	0.083	0.0030	85.039	2	3.000	5	88	15	152	36	41	13	38	87
F39	1.45	0.221	0.069	0.0030	79.933	1	2.000	5	71	18	193	22	38	10	29	69
M17	1.79	0.190	0.039	0.0034	79.872	0	10.000	3	125	27	34	23	10	14	24	145
F40	1.35	0.146	0.083	0.0030	75.952	17	4.000	5	13	9	376	47	42	13	71	62
F41	1.56	0.243	0.086	0.0040	83.513	12	2.000	7	68	24	239	27	6	4	49	48
F42	1.62	0.048	0.019	0.0030	91.870	1	2.000	7	44	8	93	10	2	7	14	78
F43	1.76	0.222	0.081	0.0030	86.506	14	3.000	7	80	14	212	30	8	1	34	73
F44	1.71	0.097	0.061	0.0030	85.851	1	10.000	5	148	17	94	25	9	16	29	141
M18	1.23	0.180	0.046	0.0026	81.729	16	10.000	5	136	13	113	25	0	35	32	141
F45	1.50	0.038	0.020	0.0030	83.001	1	3.000	4	54	13	103	11	28	10	16	97
F46	1.58	0.086	0.045	0.0030	79.994	1	7.000	5	122	16	89	19	31	12	24	143
F47	1.63	0.094	0.043	0.0300	84.197	1	8.000	5	138	22	101	22	2	13	27	137
M19	1.94	0.420	0.050	0.0029	79.483	0	8.000	3	136	17	78	24	0	15	33	137
F48	1.57	0.364	0.000	77.1590	48.000	62	0.151	9	18	2	53	6	12	13	7	468
F49	1.47	0.092	0.000	81.5590	58.000	16	0.063	13	30	2	116	5	10	37	7	1
F50	1.53	0.096	0.072	0.0040	81.362	5	4.000	5	123	23	118	17	44	13	15	97
F51	1.59	0.050	0.026	0.0030	90.169	1	2.000	4	47	8	107	10	2	5	11	90

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	HOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %	AL2O3 %
F52	OB-26	FPS-1	1.75	2.50	33.843	77.560	28.0	I	29.1	48.3	6.52	0.680	0.86	0.51
F53	OB-26	FPS-1	1.75	2.50	33.843	77.560	28.0	P	29.7	48.4	5.56	0.740	0.49	0.53
M22	OB-26	FPS-1	1.75	2.50	33.843	77.560	28.0	P	28.7	47.3	3.76	0.850	0.48	0.47
F54	OB-26	FPS-1	3.25	4.25	33.843	77.560	28.0	M	26.9	46.1	9.65	0.680	0.70	0.82
F55	OB-26	FPS-1	3.25	4.25	33.843	77.560	28.0	S	31.1	52.0	2.60	0.500	0.37	0.20
F56	OB-26	FPS-1	3.25	4.25	33.843	77.560	28.0	I	28.9	47.4	6.80	0.650	0.70	0.68
F57	OB-26	FPS-1	3.25	4.25	33.843	77.560	28.0	P	29.4	48.0	4.03	0.660	0.41	0.46
M23	OB-26	FPS-1	3.25	4.25	33.843	77.560	28.0	P	28.5	47.3	0.11	0.820	0.39	0.37
F58	OB-29	PLEIS	1.25	1.50	33.873	77.535	26.5	P	29.3	50.3	5.75	0.720	0.76	0.55
M06	OB-29B	HOL	0.00	0.50	33.873	77.535	26.5	P	28.6	47.2	2.47	0.810	0.59	0.52
M07	OB-29B	PLEIS	1.25	1.50	33.873	77.535	26.5	P	27.6	44.8	2.56	0.790	0.76	0.45
M08	OB-29B	FPS-2	5.00	5.50	33.873	77.535	26.5	P	28.7	46.8	.	0.640	0.40	0.44
F59	OB-29B	FPS-1	7.00	7.25	33.873	77.535	26.5	S	30.6	49.7	1.48	0.490	0.27	0.15
F60	OB-29B	FPS-1	7.00	7.20	33.873	77.535	26.5	I	29.9	48.0	2.68	0.580	0.41	0.40
F61	OB-29B	FPS-1	7.00	7.20	33.873	77.535	26.5	P	28.5	47.4	3.24	0.650	0.40	0.49
M09	OB-29B	FPS-2	7.00	7.10	33.873	77.535	26.5	P	28.9	46.2	0.76	0.710	0.39	0.43
F62	OB-30	FPS-1	1.50	1.50	33.916	77.503	26.0	P	28.5	48.3	3.09	0.630	0.37	0.51
F63	OB-43	HOL	0.00	0.00	34.353	76.958	25.0	P	28.4	47.5	4.50	0.880	1.62	0.48

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SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPH	CD PPH	CO PPH	CR PPH	CU PPH	MO PPH	NI PPH	PB PPH	SE PPH	V PPH	ZN PPH
F52	1.89	0.157	0.063	0.0040	88.084	1	3.000	7	69	17	84	25	9	2	14	75
F53	1.63	0.116	0.100	0.0030	87.269	1	4.000	5	139	16	106	21	7	7	16	92
M22	1.81	0.210	0.079	0.0031	83.602	3	5.000	4	138	14	101	25	6	22	22	93
F54	1.82	0.216	0.093	0.0040	86.983	8	2.000	8	66	12	183	19	9	9	16	63
F55	1.71	0.069	0.029	0.0030	88.581	1	5.000	4	49	9	343	15	2	7	9	96
F56	1.88	0.181	0.083	0.0030	87.277	1	6.000	5	82	15	203	23	2	7	14	83
F57	0.41	0.099	0.067	0.0030	83.539	1	7.000	4	133	16	204	20	2	4	14	117
M23	1.18	0.210	0.049	0.0027	78.942	3	8.000	5	125	12	226	21	0	23	18	121
F58	1.60	0.142	0.098	0.0040	89.224	1	9.000	9	154	18	12	24	9	7	12	130
M06	1.66	0.210	0.000	82.1290	127.000	17	0.085	21	0	8	152	4	22	8	5	5
M07	1.13	0.220	0.110	0.0042	78.334	13	10.000	6	141	13	45	21	0	22	16	129
M08	1.89	0.200	0.045	0.0026	.	0	5.000	3	122	20	87	20	2	15	20	19
F59	1.41	0.037	0.031	0.0040	84.172	1	4.000	4	45	15	140	12	27	5	10	92
F60	1.56	0.092	0.490	0.0030	84.115	1	3.000	5	67	19	83	18	31	5	13	84
F61	1.59	0.085	0.054	0.0030	82.412	1	5.000	5	115	15	77	19	32	12	14	94
M09	1.58	0.180	0.050	0.0026	79.193	0	6.000	3	115	15	63	19	6	4	20	104
F62	1.44	0.084	0.055	0.0030	82.982	1	10.000	5	104	26	13	19	36	5	19	167
F63	1.58	0.130	0.000	85.1470	56.000	17	0.049	14	198	1	134	6	12	6	1	1

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	HOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %	AL2O3 %
F64	OB-64	HOL	0.30	0.54	33.805	77.630	20.1	P	28.0	45.9	2.36	0.880	1.52	0.51
F65	OB-64	HOL	0.30	0.54	33.805	77.630	20.1	P	28.6	47.2	2.78	0.810	1.57	0.52
M01	OB-64	PLEIS	1.00	1.25	33.805	77.630	20.1	P	28.9	47.8	1.49	0.670	1.27	0.43
F66	OB-64	FPS-1	3.38	3.50	33.805	77.630	20.1	P	29.8	46.6	3.75	0.730	0.66	0.47
M02	OB-64	FPS-1	3.38	3.50	33.805	77.630	20.1	P	27.3	44.9	2.32	0.670	0.66	0.45
F67	OB-64	FPS-1	4.00	4.50	33.805	77.630	20.1	P	27.6	47.2	3.13	0.720	0.48	0.45
M03	OB-64	FPS-1	4.00	4.50	33.805	77.630	20.1	P	29.3	48.4	1.94	0.720	0.51	0.44
F68	OB-64	FPS-1	4.70	5.45	33.805	77.630	20.1	I	27.9	48.2	8.02	0.580	0.59	0.49
F69	OB-64	FPS-1	4.70	5.45	33.805	77.630	20.1	P	30.0	49.3	5.10	0.790	0.49	0.50
M04	OB-64	FPS-1	4.75	5.45	33.805	77.630	20.1	P	29.8	47.3	1.73	0.810	0.45	0.44
F70	OB-64	FPS-1	5.50	5.80	33.805	77.630	20.1	I	28.9	46.1	3.39	0.630	0.46	0.38
F71	OB-64	FPS-1	5.50	5.80	33.805	77.630	20.1	S	31.4	49.5	1.38	0.630	0.24	0.15
F72	OB-64	FPS-1	5.50	5.80	33.805	77.630	20.1	P	28.0	46.0	4.95	0.700	0.48	0.49
F73	OB-64	FPS-1	5.50	5.80	33.805	77.630	20.1	P	27.8	45.5	4.64	0.700	0.47	0.49
F74	OB-64	FPS-1	5.50	5.80	33.805	77.630	20.1	P	28.5	43.7	4.72	0.700	0.48	0.51
M05	OB-64	FPS-1	5.50	5.80	33.805	77.630	20.1	P	29.0	47.7	1.37	0.870	0.44	0.43
M33	OB-64	FPS-1	6.00	6.25	33.805	77.630	20.1	P	27.8	44.9	5.22	0.720	0.42	0.42
F75	OB-78	PLEIS	0.10	0.10	33.723	77.651	19.5	P	28.2	43.1	2.49	0.860	1.70	0.44

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPH	CO PPH	CR PPH	CU PPH	MO PPH	NI PPH	PB PPH	SE PPH	V PPH	ZN PPH	
F64	1.49	0.091	0.089	0.0080	80.848	54	1.000	6	119	12	1	11	41	10	21	63
F65	1.41	0.090	0.098	0.0080	83.086	56	1.000	6	119	12	1	11	44	2	22	65
M01	1.80	0.240	0.094	0.0095	82.693	26	1.000	5	124	13	68	7	10	3	19	44
F66	1.49	0.104	0.070	0.0060	83.680	1	6.000	4	132	42	189	19	67	4	13	118
M02	1.79	0.220	0.063	0.0056	78.389	0	7.000	2	135	40	138	19	25	10	21	121
F67	1.45	0.094	0.073	0.0060	81.203	1	8.000	5	131	15	41	20	34	9	13	131
M03	1.76	0.230	0.075	0.0058	83.381	0	9.000	0	130	12	31	21	0	10	14	140
F68	1.61	0.153	0.057	0.0040	87.604	1	2.000	5	67	13	125	23	2	5	20	85
F69	1.58	0.111	0.084	0.0050	87.960	1	10.000	5	142	17	86	24	1	2	16	137
M04	1.73	0.200	0.055	0.0041	82.559	0	9.000	4	130	15	46	21	4	8	21	134
F70	1.45	0.094	0.057	0.0050	81.466	1	4.000	5	70	23	96	19	35	5	14	114
F71	1.41	0.048	0.028	0.0050	84.791	1	4.000	5	13	17	96	13	27	5	12	114
F72	1.43	0.104	0.080	0.0050	82.239	1	9.000	5	130	15	80	23	39	15	15	142
F73	1.43	0.113	0.087	0.0050	81.235	1	9.000	5	128	15	82	23	34	15	15	139
F74	1.48	0.111	0.091	0.0050	80.297	1	10.000	5	131	16	86	21	37	12	15	141
M05	1.63	0.190	0.047	0.0043	81.721	0	10.000	4	137	16	68	23	7	21	22	155
M33	1.18	0.220	0.071	0.0034	80.904	6	6.000	7	120	13	141	20	0	17	20	110
F75	1.48	0.086	0.056	0.0080	78.420	141	1.000	5	124	14	1	9	37	3	17	51

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	MOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SI02 %	MGO %	FE2O3 %	AL2O3 %
F76	OB-78	PLEIS	0.10	0.10	33.723	77.651	19.5	P	27.2	46.1	2.52	0.870	1.74	0.44
F77	OB-98	HOL	0.75	1.00	33.783	77.635	25.3	P	28.4	47.3	2.95	0.870	1.33	0.49
251	OB-104	FPS-1	6.50	6.75	34.006	77.440	29.5	P	28.7	47.8	2.47	0.607	0.39	0.56
272	OB-104	FPS-1	6.50	6.75	34.006	77.440	29.5	I	27.3	44.9	4.85	0.567	0.44	0.60
257	OB-114	FPS-1	6.50	6.75	33.645	77.696	20.4	P	25.8	42.5	6.47	0.638	0.51	0.45
265	OB-114	FPS-1	6.50	6.75	33.645	77.696	20.4	I	25.0	41.1	.	0.589	1.02	0.71
253	OB-114	FPS-1	7.00	7.25	33.645	77.696	20.4	P	27.3	45.1	5.21	0.669	0.48	0.47
266	OB-114	FPS-1	7.00	7.25	33.645	77.696	20.4	I	26.0	43.7	5.33	0.545	0.77	0.44
261	OB-114	FPS-1	7.25	7.50	33.645	77.696	20.4	P	27.3	45.7	6.53	0.660	0.50	0.49
254	OB-115	FPS-1	5.50	5.75	33.711	77.660	24.2	P	27.7	45.1	3.97	0.656	0.51	0.44
273	OB-115	FPS-1	5.50	5.75	33.711	77.660	24.2	I	26.5	42.9	5.22	0.564	1.01	0.52
259	OB-115	FPS-1	6.00	6.25	33.711	77.660	24.2	P	27.7	45.4	4.21	0.654	0.48	0.46
271	OB-115	FPS-1	6.00	6.25	33.711	77.660	24.2	I	27.3	42.4	6.02	0.538	1.25	0.40
250	OB-115	FPS-1	6.50	6.75	33.711	77.660	24.2	P	27.6	45.9	4.44	0.649	0.48	0.46
268	OB-115	FPS-1	6.50	6.75	33.711	77.660	24.2	I	25.6	41.3	7.62	0.542	2.21	0.54
252	OB-115	FPS-1	7.00	7.30	33.711	77.660	24.2	P	27.3	45.0	4.95	0.651	0.47	0.49
267	OB-115	FPS-1	7.00	7.30	33.711	77.660	24.2	I	26.0	43.7	7.05	0.602	1.29	0.69
262	OB-120	FPS-1	4.25	4.50	33.795	77.588	23.4	P	26.8	44.2	2.68	0.629	0.51	0.39

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPH	CO PPH	CR PPH	CU PPH	MO PPH	NI PPH	PB PPH	SE PPH	V PPH	ZN PPH	
F76	1.47	0.087	0.061	0.0080	80.526	140	1.000	5	125	13	1	8	41	7	17	79
F77	1.45	0.100	0.000	82.9660	65.000	16	0.068	13	52	1	126	5	11	37	7	1
251	1.54	.	0.052	0.0050	.	3	5.000	14	96	2	44	21	2	2	15	75
272	1.41	.	0.074	0.0050	.	9	5.000	22	58	3	48	18	5	4	16	79
257	1.36	.	0.067	0.0050	.	11	8.000	15	119	3	91	20	3	11	14	92
265	1.38	.	0.086	0.0050	.	42	3.000	23	87	3	163	34	4	13	26	57
253	1.41	.	0.050	0.0050	.	9	6.000	14	120	2	110	20	0	6	14	94
266	.	1.344	0.056	0.0050	.	30	4.000	20	66	3	168	33	2	12	20	62
261	1.44	.	0.075	0.0050	.	12	7.000	14	118	3	135	28	2	10	17	100
254	1.40	.	0.061	0.0050	.	9	11.000	16	118	3	103	20	1	11	19	136
273	1.09	.	0.050	0.0270	.	32	2.000	20	70	4	144	27	4	12	23	74
259	1.49	.	0.077	0.0050	.	8	13.000	16	126	3	115	23	1	12	20	157
271	1.19	.	0.050	0.0040	.	38	4.000	21	61	3	247	32	5	15	19	88
250	1.46	.	0.067	0.0040	.	7	15.000	15	127	3	108	23	0	10	18	163
268	1.42	.	0.066	0.0040	.	53	4.000	24	70	4	473	38	10	20	20	90
252	1.44	.	0.069	0.0040	.	9	14.000	17	126	3	133	24	2	17	18	158
267	1.34	.	0.074	0.0040	.	48	4.000	25	72	4	506	37	8	14	28	80
262	1.33	.	0.053	0.0050	.	11	8.000	15	112	3	247	35	2	16	21	183

CHEMICAL ANALYSES OF HAND-PICKED CONCENTRATES
OF PHOSPHATE GRAIN TYPES

SPL NUM	HOLE	UNIT	TOP DEPTH	BOT DEPTH	LAT	LONG	H2ODEPTH (M)	GRAIN TYPE	P2O5 %	CAO %	SI02 %	HGO %	FE2O3 %	AL2O3 %
260	OB-120	FPS-1	4.75	5.00	33.795	77.588	23.4	P	27.3	45.7	3.34	0.635	0.52	0.45
269	OB-120	FPS-1	4.75	5.00	33.795	77.588	23.4	I	24.2	41.1	7.05	0.545	1.60	0.53
255	OB-120	FPS-1	5.50	5.75	33.795	77.588	23.4	P	28.2	45.6	2.45	0.668	0.40	0.43
270	OB-120	FPS-1	5.50	5.75	33.795	77.588	23.4	I	26.4	44.2	4.46	0.532	0.68	0.39
256	OB-120	FPS-1	5.75	6.00	33.795	77.588	23.4	P	27.8	45.4	2.26	0.505	0.35	0.35
263	OB-120	FPS-1	5.75	6.00	33.795	77.588	23.4	I	24.9	41.6	.	0.543	0.72	0.62
263	OB-120	FPS-1	5.75	6.00	33.795	77.588	23.4	I	25.7	41.4	8.16	0.537	0.68	0.55
258	OB-120	FPS-1	6.50	6.75	33.795	77.588	23.4	P	27.5	46.1	3.02	0.614	0.55	0.50
264	OB-120	FPS-1	6.50	6.75	33.795	77.588	23.4	I	25.3	42.0	7.38	0.544	0.78	0.61
F01	OBS-1	HOL	0.00	0.00	34.436	76.936	.	M	27.4	45.4	6.64	0.730	2.80	0.77
F02	OBS-1	HOL	0.00	0.00	34.436	76.936	.	M	28.2	47.9	8.00	0.960	2.90	1.07

SPL NUM	NA2O %	K2O %	TI02 %	MNO %	SUM %	AS PPH	CD PPH	CO PPH	CR PPH	CU PPH	MO PPH	NI PPH	PB PPH	SE PPH	V PPH	ZN PPH
260	1.40	.	0.080	0.0040	.	11	9.000	16	123	3	152	23	1	11	16	114
269	1.02	.	0.051	0.0040	.	79	4.000	16	55	3	.	28	5	10	9	67
255	1.44	.	0.041	0.0030	.	4	11.000	15	119	3	96	22	2	9	16	141
270	1.29	.	0.046	0.0030	.	18	4.000	23	60	2	140	24	2	8	18	83
256	1.13	.	0.041	0.0030	.	1	12.000	14	101	3	88	19	0	7	13	139
263	1.30	.	0.061	0.0040	.	19	4.000	20	63	2	214	22	9	8	23	66
263	1.11	.	0.055	0.0030	.	17	4.000	18	60	2	185	21	5	12	21	65
258	1.32	.	0.053	0.0033	.	8	10.000	16	111	2	187	24	0	2	16	135
264	1.01	.	0.063	0.0030	.	25	4.000	17	60	4	234	24	13	13	19	67
F01	1.24	0.184	0.091	0.0190	85.274	74	2.000	9	62	1	234	14	49	5	49	37
F02	1.29	0.259	0.084	0.0240	90.687	129	3.000	13	97	10	169	21	16	10	66	58

GEOLOGIC LOGS OF MIOCENE-BEARING VIBRACORES

This data file presents the geologic logs for vibracores obtained in Onslow Bay, North Carolina during the Onslow Bay research project. All vibracores that have a Miocene section are included and are located on Figure 3. However, not all vibracores have a Miocene section nor do all of the cores presented have a Miocene section. A stratigraphic summary of all vibracores is presented in the data section entitled *Stratigraphic Units Occurring in Vibracores*.

The unedited logs have been copied directly from the originals and are presented as described by the person who logged the core. Consequently, there have been no grammatical corrections or changes to develop uniformity between the logs. The logs summarize the lithostratigraphic descriptions and present the stratigraphic unit assignments based upon the most recent core interpretations utilizing biostratigraphy (Scott W. Snyder, 1988; 1990), seismic-stratigraphy (Stephen W. Snyder, 1982; Stephen W. Snyder and others, 1982, 1990), lithofacies analysis (Riggs, 1984; Riggs and others, 1985, 1990; Riggs and Mallette, 1990), and ongoing isotopic analysis and radiometric age-dating (Stille and others, in press) and as summarized in Riggs and Ames (1992).

The logs are presented in numerical order. If a core number is missing in the log sequence, check the section entitled *Stratigraphic Units Occurring in Vibracores* for the status of that particular core. Many cores that only contain Pleistocene or Oligocene sediments have not been included in this publication. The key for the vibracore information, geologic log, and associated data provided on each log is as follows.

ONSLOW BAY CORE NUMBER:

OB-1 Onslow Bay vibracore number 1.

CRUISE:

National Science Foundation: Onslow Bay Research Project.

LENGTH ATTEMPTED:

Length of vibracore attempted in meters.

LENGTH OF CORE:

Length of core recovered in meters. Length of core is commonly longer than length attempted due to high organic content and unique clay mineral compositions of the Miocene section resulting in core expansion of the Miocene sediments.

DATE LOGGED:

Date that vibracore was described and logged.

BY:

Geologist that logged the vibracore.

LATITUDE:

Location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships. Latitude is presented in three different formats:

- 1) 34.865 degrees
- 2) 34d 51.9'

LONGITUDE:

Location in decimal degrees is derived by calculation from Loran C navigational system. Thus, there is a certain variability in utilizing different navigational systems on different ships. Longitude is presented in three different formats:

- 1) 77.787 degrees
- 2) 77d 47.2'

CHEMICAL DATA:

Only chemical data for a few representative samples, primarily of the Miocene section, are presented on the lithologic logs. These chemical data are for total sediment with only 6 major elements presented; all sample data for all elements analyzed are presented in the data tables in the section entitled *Chemical Data for Vibracore and Surface Bulk-Sediment samples*. Notice that the histogram scales on the logs are different for each element as outlined below.

P2O5	P ₂ O ₅ percent; scale width = 0% on left to 30% on right.
CaO	CaO percent; scale width = 0% on left to 60% on right.
SiO2	SiO ₂ percent; scale width = 0% on left to 100% on right.
MgO	MgO percent; scale width = 0% on left to 10% on right.
Fe2O3	Fe ₂ O ₃ percent; scale width = 0% on left to 10% on right.
Al2O3	Al ₂ O ₃ percent; scale width = 0% on left to 15% on right.

AGE:

Holocene	Modern shelf sand, gravelly sand, and gravel
Pleistocene	Undifferentiated
Miocene	Pungo River Formation
Oligocene	Silverdale Formation

UNIT:

Stratigraphic units of the Miocene Pungo River Formation from oldest at the base to youngest at the top:

- Bogue Banks Sequences
 - BBS-8
 - BBS-7
 - BBS-6
 - BBS-5
 - BBS-4
 - BBS-3
 - BBS-2
 - BBS-1
- Onslow Bay Sequences
 - OBS-U (Undifferentiated)*
 - OBS-4
 - OBS-3
 - OBS-2
 - OBS-1
- Frying Pan Sequences
 - FPS-6
 - FPS-5
 - FPS-4

FPS-3
FPS-2
FPS-1

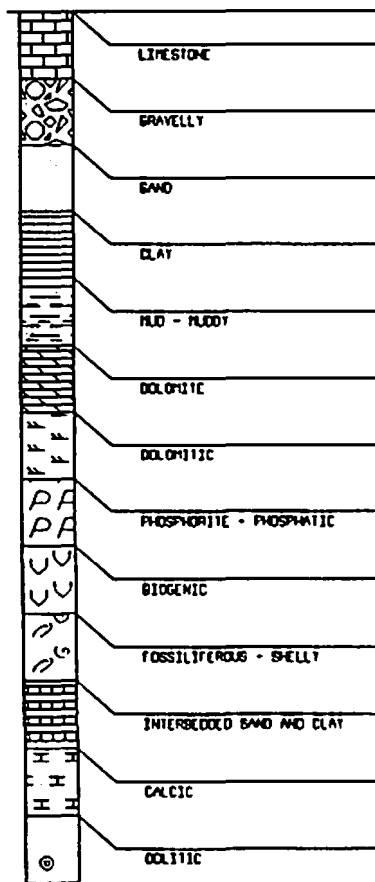
* Where data are insufficient to identify the specific OBS sequence, it is listed as "OBS-U".

DEPTH:

Depth in meters from the top of the core and the sediment-water interface.

LITHOLOGY:

The general lithologic patterns utilized in the logs are outlined below.

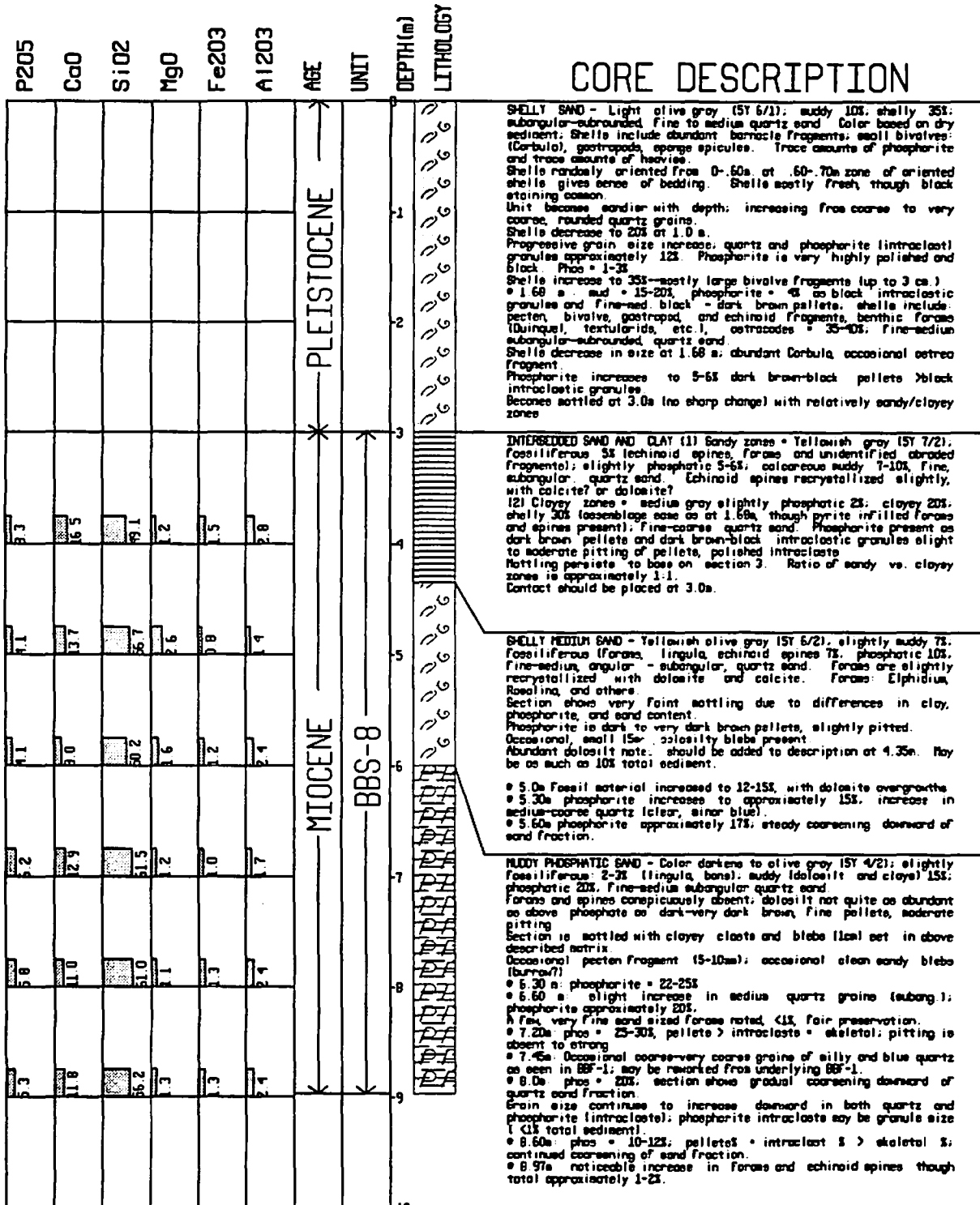


CORE DESCRIPTION:

An unedited description of the sediments is presented by major lithologic units.

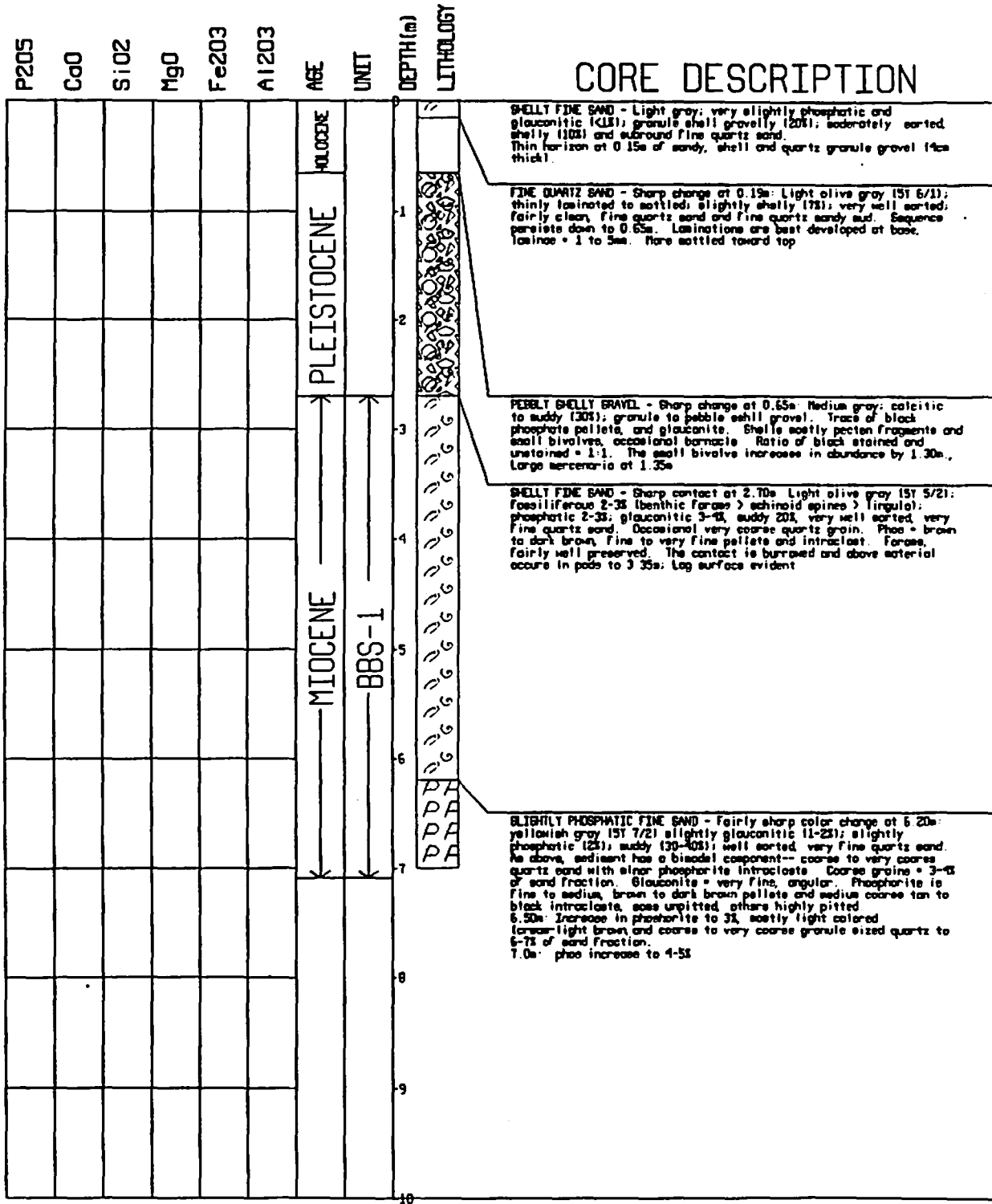
ONslow BAY CORE NUMBER: OB-1

CRUISE: NSF O. BAY DATE LOGGED: 5-8-84 LATITUDE: 34.640
 LENGTH ATTEMPTED: 8.6 BY: P. MALLETTE LONGITUDE: 76.768
 LENGTH OF CORE: 8.97



ONslow BAY CORE NUMBER: OB-2

CRUISE: NSF O. BAY DATE LOGGED: 3-25-84 LATITUDE: 34d 38'
 LENGTH ATTEMPTED: 6.96 BY: P. MALLETTE LONGITUDE: 76d 51.9'
 LENGTH OF CORE: 7.09



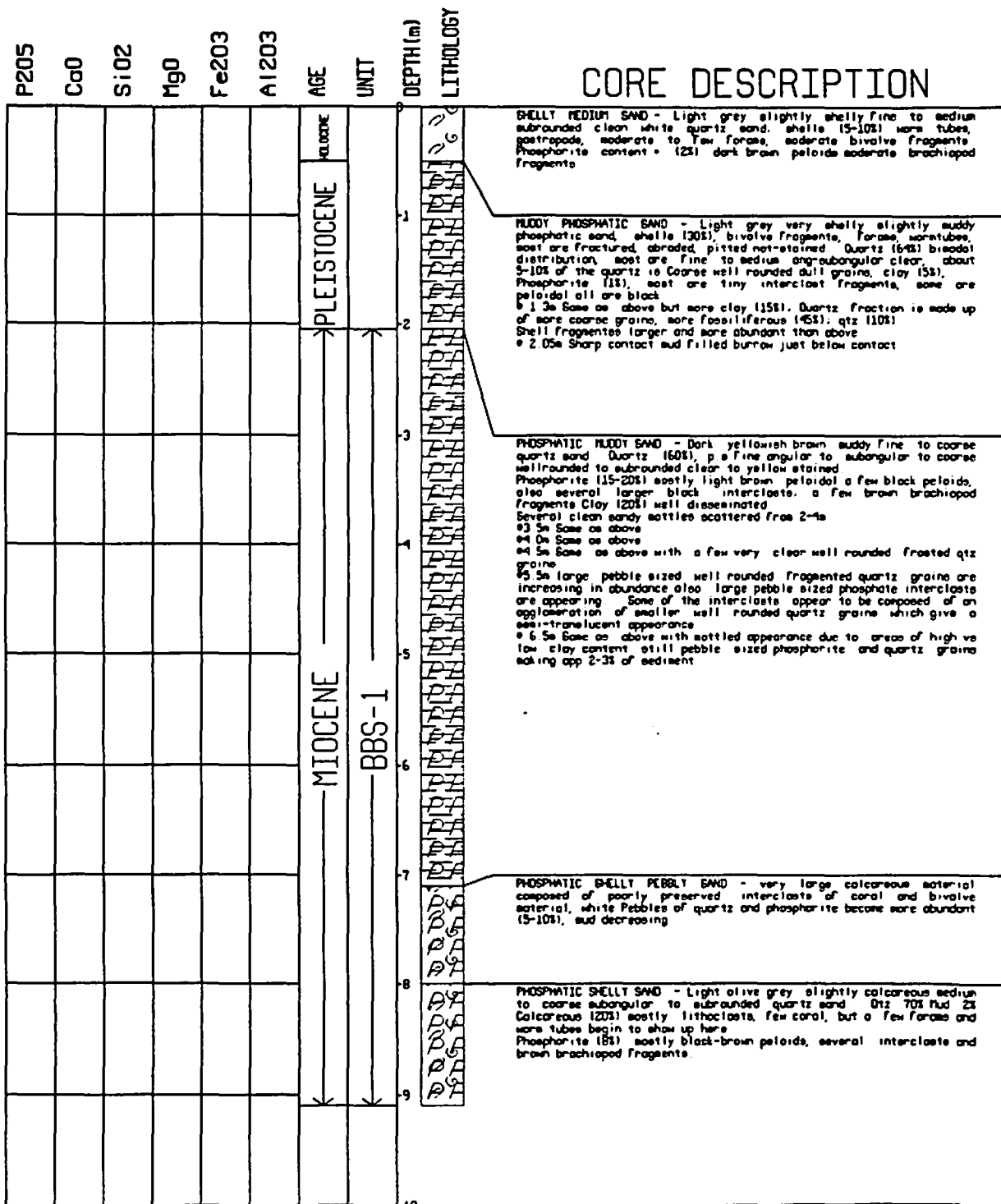
ONslow BAY CORE NUMBER: OB3

CRUISE: NSF N. O. BAY DATE LOGGED: 2-9-84 LATITUDE: 34.628 degrees
 LENGTH ATTEMPTED: 6.7 m BY: P. MALLETTE LONGITUDE: 76.890 degrees
 LENGTH OF CORE: 9.30 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						PLEISTOCENE	PLEISTOCENE	0	D G	<p>SHELLY COARSE SAND - Medium light gray, muddy SS, poorly sorted fine to coarse, angular-well rounded, quartz sandy 40 to 50%. shell hash. Shells include <i>Nulina</i>, razor clam, other small bivalves, a few large <i>Mercaenaria</i> frags, forams, gastropods, bryozoans, echinoids. Fossils are black to gray if stained. Trace of phosphorite, pyrite, garnet. Estuarine-marginal marine looking sediment. Mud content increases as sand decreases at 0.42a, shells become somewhat coarser. Few large (6-1cm) phos intraclasts scattered throughout (black).</p>
						PLEISTOCENE	PLEISTOCENE	1	D G	<p>PHOSPHATIC FOSSILIFEROUS FINE SAND - Sharp contact at 0.77a. Light olive gray (SY 5/2) (color probably due to incense oxidation), very slightly fossiliferous (bone, teeth, lingula), muddy 15-20%, moderately well sorted, angular, very fine quartz sand with occasional medium to coarse, clear-blue-purple quartz grains. Trace of phosphorite as very fine, brown-coarner grains. Trace amount of heavy fossils. Fossil content increases at 1.25a to 7-10%, includes barnacle fragments, lingula bivalves (whole and fragments, small forams), bryozoans. Phos = 1%.</p> <p>At 1.60a: Phosphorite increases to 3-4% of sand fraction, mostly very fine to fine pellets, color to dark brown, with some medium to coarse intraclasts, black to medium brown. Many of the larger grains show severe pitting. Fossils also decrease, only lingula, teeth, and bone remain (1%). Sand fraction becoming sli coarser as medium to coarse grains increase, still dominantly very fine grained. Phosphate increasing steadily downward = 7-10% at 2.15a. Medium brown to very dark brown, medium-fine pellets > medium brown to black intraclasts. All phos grains pitted, leached (?).</p> <p>At 2.40a phosphorite = 15-20%.</p> <p>At 2.65a phosphorite = 8-11%, lingula and bone has increased steadily to 3%, gradual coarsening of quartz sand continues, still dominantly very fine.</p> <p>At 3.00a sand is 60% very fine to fine, 40% medium to very coarse; phosphorite 6-8%.</p> <p>3.10a phosphorite increased to 8-10%.</p> <p>3.50a phosphorite decreased to 5-6%.</p> <p>3.75a phosphorite increased to 8% with increasing skeletal component (subtle), relatively large phos bone fragments (3-4cm).</p> <p>4.50a: sand fraction = very fine to coarse, poorly sorted (fairly even distribution), angular quartz sand, phosphorite = 8%, two types 1) dark brown to black fine pellets and medium coarse intraclasts, slightly to moderately pitted, and 2) medium to coarse, tan highly pitted intraclasts (?), these grains somewhat resemble DL '8 cracked' grains, not interpreted here as mud clasts. Give strong reaction in ammonium molybdate phosphorite test. Type 1 and 2 approximately equal proportions.</p> <p>5.0a: sli increase in very coarse quartz grains = 2-3% (total).</p> <p>5.25a very gradual increase in phosphorite to 8-12%.</p> <p>5.50a skeletal phosphorite increase as very coarse bone fragments appear. Skeletal = 2%, mottling (wispy-sandy) becoming apparent, not apparent above probably due to extreme desiccation of sediment. Mottling is typical of BBS-1.</p> <p>5.75a phos, skeletal and medium coarse quartz grains decreasing. Phosphorite = 6-8%, skeletal = 1-2%, medium coarse quartz = 20% (of sand fraction). Sand (quartz) is dominantly very fine.</p> <p>6.25a phosphorite = 12-15%, very dark brown pellets and intraclasts and tan, pitted "cracked" grains (?). Pellets are increased component.</p> <p>6.60a phosphorite = 7-10% decreasing to 4-5% at 6.75a.</p> <p>7.25a Quartz sand evenly distributed, very fine to very coarse, occasional blue quartz and aesthyst, garnet. Phos only sli pitted.</p> <p>7.50a phosphorite = 3-4%. A few quartz granules (4cm).</p> <p>7.75a Quartz granules and phos intraclasts, well rounded polished, up to 8cm scattered in section.</p> <p>8.0a Trace of glauconite. Mud increased steadily from 15-20% at top to 25-30% in lower part of section.</p> <p>8.3a: phosphorite content = 1-2%.</p>
						MIOCENE	BBS-1	5	D G	<p>SHELLY SAND - Sharp contact at 8.70a. Yellowish gray (SY B/1), calcitic muddy 20%, dolosilty barnacle hash. Contact is moderately burrowed and has pebbles, lag pebbles = phosphorite intraclasts and quartz coarse and phosphorite pavement fragments (20cm) grades down to moderately indurated to indurated lat 9.0a) solid/c barnacle hash dolostone.</p>
						MIOCENE	BBS-1	9	D G	

ONSLow BAY CORE NUMBER: OB-4

CRUISE: NSF O. BAY DATE LOGGED: 6-25-90 LATITUDE: 34.608 degrees
 LENGTH ATTEMPTED: 7.3 BY: D. YEATES LONGITUDE: 76.913 degrees
 LENGTH OF CORE: 9.1



ON SLOW BAY CORE NUMBER: OB-5

CRUISE: NSF O. BAY DATE LOGGED: 6-26-90 LATITUDE: 34.640 degrees
 LENGTH ATTEMPTED: 5.2m BY: D. YEATES LONGITUDE: 76.708 degrees
 LENGTH OF CORE: 7.8m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY
						← PLIOCENE →	← PLIOCENE →	0	<p>SHELLY MEDIUM SAND - Very light gray fine to medium subangular to subrounded clean quartz sand Shells mostly fine, highly fractured white bivalve fragments with several large 2 inch diameter blue-gray bivalve fragments, well preserved. Also a few forams, quartz (85%), shells (15%). Trace of phosphatic black peloids medium interclasts • 4.6a Sharp contact color change to greenish gray • 4.6b Same except more shell better bivalve hash and muddier (110%) • 4.6c Same as above with higher clay content and (15%) probably carbonate mud? Phosphatic (5%) brown to black peloids and a few interclasts. Areas of increased shell hash mottle the unit slightly</p>
						← PLEISTOCENE →	← PLEISTOCENE →	1	<p>MUDDY SHELLY COARSE SAND - Light grey muddy very shelly po fine to coarse quartz sand. Shells (30-35%) mostly fragmented but well preserved bivalve hash with some small well preserved forams and gastropods. Phosphatic (5-10%) brown peloids with a few small interclasts. Quartz (40-45%) fine coarse p a subangular-rounded clear to yellow stained, clay (20%) possible carbonate mud? 3.0 Same as above 3.5 Vague contact because of interbeds possible burrows?</p>
						← PLEISTOCENE →	← PLEISTOCENE →	2	<p>SHELLY MUDDY SAND - Yellowish gray muddy shelly quartz rich po carbonate sand. Quartz (15-20%) fine angular to coarse well rounded clear to frosted carbonate (40%) consists of large fractured abraded and pitted bivalve fragments and also fine to medium sand sized very poorly preserved fossil fragments. Phosphatic (5%) dark brown interclasts smooth-pitted very few round peloids, clay (20%) cream colored carbonates (7). A few garnets are noted • 4.4a light bluish gray muddy very shelly quartz carbonates Quartz (20%) p a fine to coarse subangular, clear. Carbonate (60%) mostly bivalve shells, blue fragments some large and blue Phosphatic (5%) Most are black interclast fragments, they are small enough to be peloids but they lack the spherical shape most are elongate lenticular. Clay (15-20%) light grey to cream carbonate mud • 4.6a Interbeds of quartz carbonate very slightly muddy sand interbed with above material. These interbed are dominant down to 6.3a. They contain quartz (40%) fine coarse mud well sorted angular-subrounded clear. Carbonate (50%) fine-coarse poorly preserved shell material from bivalves and forams. Clay (10%) carbonate mud evenly disseminated. Trace of phosphatic, peloidal black • 6.3 sharp contact</p>
						← PLEISTOCENE →	← PLEISTOCENE →	3	<p>SHELLY MEDIUM SAND - Light olive gray slightly muddy shelly moderately sorted subangular-subrounded clear to slightly yellow medium quartz sand Qtz (70%) moderately sorted subangular subrounded clear to slightly yellow medium quartz Carbonate (20%) mostly highly fractured and abraded white bivalve hash also a few moderately well preserved forams Clay (8%) evenly disseminated through sand but highly concentrated in medium light gray burrows that occur just below contact Phosphatic (2%) mostly black some brown fine sand size but irregular subangular to subrounded Entire unit from 6.3 to bottom is very uniform other than burrows at top This unit is highly mottled due to areas of very high shell hash • 7.8 slightly less carbonate (10%) clay (15%)</p>
								4	
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								8	
								9	
								10	

ONslow BAY CORE NUMBER: OB6B

CRUISE: NSF O. BAY DATE LOGGED: 5-8-84 LATITUDE: 34.443 degrees
 LENGTH ATTEMPTED: 7.46m BY: P. MALLETT LONGITUDE: 76.943 degrees
 LENGTH OF CORE: 7.46m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY	CORE DESCRIPTION
								0	PH	<p>MUDDY PHOSPHATIC SAND - Dark olive brown, slightly phosphatic 1 to 2%. slightly micaceous 1 to 2%; saddy 15 to 20%. very fine, subangular quartz sand with some medium quartz grains. Phosphorite dominantly pelletal, very fine to fine, tan to medium brown to very dark brown. Mica may possibly be shell material. Mud is probably dominantly quartz silt. Trace to 1% Lingula fragments. Trace % glauconite. Trace % black heavies. Some of the larger quartz grains are silty to bluish to purplish, these are characteristically well to very well rounded. Section shows distinct settling "pin and wavy" sandy siltstone. Overall color of phos grains lightening. Some are cream white color through light tan. % of fine and medium quartz grains increase though still dominantly very fine (sand fraction) mud = 20 to 25%. Trace % of fine to medium, black, very well polished intraclasts. Sand fraction almost equally proportioned very fine to fine with significant but lesser medium quartz grains. Phosphorite increased slightly 2 to 3%, show gradation from cream colored through tan, medium brown, dark brown to black. Pellets intraclasts approximately 1:1. Some amber skeletal fragments (other than Lingula) noticed approximately Trace % Trace % garnet. Phosphorite decrease to 1 to 2%, a few very coarse to granule (2mm) sized quartz grains. Phosphorite increase to 4 to 5%, light colored phosphorite grains give way to darker though the light grains still significant. Dominantly intraclastic.</p>
								1	PH	
								2	PH	
								3	PH	
1.6	2.9	55.8	1.0	2.1	5.8			4	PH	
								5	PH	
								6	PH	<p>FOSSILIFEROUS MUDDY PHOSPHATIC SAND - Gradational contact from 6 On to 6.50m (Not observed to be as sharp as Lewis noted) Change occurs as dark olive, muddy siltstone become subordinate to lighter sandy siltstone. Lighter sandy unit - Yellowish light olive gray (5Y 6/2); slightly fossiliferous 3%; slightly saddy 3%; phosphatic 5%; fine, very well sorted, subangular quartz sand fossils mostly Forams (in micaceous and others), broken to moderately well preserved. Also Lingula fragments. Mud fraction mostly quartz silt. Phosphate - medium to dark brown pellets approximately dark brown to black intraclasts. Fine to medium trace % glauconite as distinct grains (unlike coatings in basal portion OB-39). Mud and silt decreased to 0 to trace % at -7.12m though small clayey pin siltstone persist (very few).</p>
2.8	4.8	21.1	0.4	0.5	1.5			7	PH	
2.5	4.7	24.9	0.4	0.5	1.4			8	PH	
								9	PH	
								10	PH	

ON SLOW BAY CORE NUMBER: OB9

CRUISE: NSF 0. BAY DATE LOGGED: 8-23-80 LATITUDE: 33.852 degrees
 LENGTH ATTEMPTED: 3.0m BY: D. LEWIS LONGITUDE: 77.628 degrees
 LENGTH OF CORE: 3.3m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY
						HOLOCENE	HOLOCENE	0	PHOSPHATIC FOSSILIFEROUS SAND - Grey, clean, poorly sorted phosphatic (13 to 45), fossiliferous (15 to 155-echinoid spines, bivalve fragments, Forams) subrounded fine to medium grained quartz sand. Grain size varies from medium to coarse in phosphatic, occasional larger bivalve fragment
							1		
						MIOCENE	MIOCENE	2	MUDDY FOSSILIFEROUS PHOSPHATIC SAND - Sharp contact, olive green, muddy (10 to 12%) increasing to 20 to 25% at bottom, fossiliferous (35-Forams, with a few echinoid spines), phosphatic (15 to 20%), quartz sand. Forams diminishing downward to 25 to 30% occasional teeth and phosphatic pebbles
0.4	4.1	8.9	0.9	1.7	5.3		2		
0.2	2.4	5.7	2.1	1.8	5.5		3		
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ONslow BAY CORE NUMBER: OB-11

CRUISE: NSF O. BAY DATE LOGGED: 6-25-90 LATITUDE: 33d 52.1'
 LENGTH ATTEMPTED: 6.4 BY: D. YEATES LONGITUDE: 77d 34.7'
 LENGTH OF CORE: 9.0

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						← MIOCENE →	← FPS-1 →	0	|	<p>MUDDY PHOSPHATIC FINE SAND - Dusky yellowish green very muddy foraminiferal quartz phosphatic fine grained sand forams (5-10%) many are slightly fractured moderately corroded but some are well preserved, unstained and evenly disseminated. Quartz (30%) fine subangular sand, clear to slightly orange stained with very few coarse size clear well rounded grains. Phosphatic (30%) entirely peloidal. Light to dark brown smooth grains. Several brachiopod fragments. Clay (30%) This binding clay matrix gives this unit a mottled appearance. Areas of higher clay content appear lighter than the other areas because of the higher visibility of the phosphate grains in the low clay areas. Mottled appearance probably result of burrowing organisms?</p>
						← MIOCENE →	← FPS-1 →	1	|	<p>MUDDY PHOSPHATIC FINE SAND - Dusky yellow green very muddy quartz phosphatic fine grained sand. Forams (2%) very sparse but most are whole and well preserved, non-stained. Quartz (40%) bi-modal with 60% a fine subangular clear to slightly yellow sand and 20% a coarse well rounded to subrounded clear to slightly yellow sand, some are silky white frosted. Phosphatic (30%) most peloidal with some irregular rough surfaced interclasts all are brown to dark brown. Clay (28%) more evenly disseminated below 1.4m. Therefore, no mottled appearance below that. * 2 On Same uneven contact.</p>
						← MIOCENE →	← FPS-1 →	2	|	<p>SHELLY DOLOMITIC FINE SAND - Yellowish gray slightly muddy well sorted carbonate, quartz very fine to fine sand. Carbonate (35%) fragmented fine grained shell hash. Forams, echinoids, sponge spics, unstained. Qtz (65%) fine to very fine angular to subangular clear grains very well sorted. Clay or possibly dolomite? (5-10%) evenly disseminated. From 3-4m there are several large clay splashes or lenses of the above section. These mottled or lenses are probably the result of burrowing organisms bringing down the mud from above. This unit is very uniform from top to bottom. * 3 On same as above. * 4 On From here down there is a slightly mottled appearance due to pods and lenses of white carbonate shell hash as well as more broad areas of slightly higher concentrations of clay which lend a darker shade. The clay lenses or interbeds may be void of dolomite? * 7 On Same as above—trace of phosphate.</p>
						← OLIGOCENE →		3	|	
						← OLIGOCENE →		4	|	
						← OLIGOCENE →		5	|	
						← OLIGOCENE →		6	|	
						← OLIGOCENE →		7	|	
						← OLIGOCENE →		8	|	
						← OLIGOCENE →		9	|	
						← OLIGOCENE →		10	|	

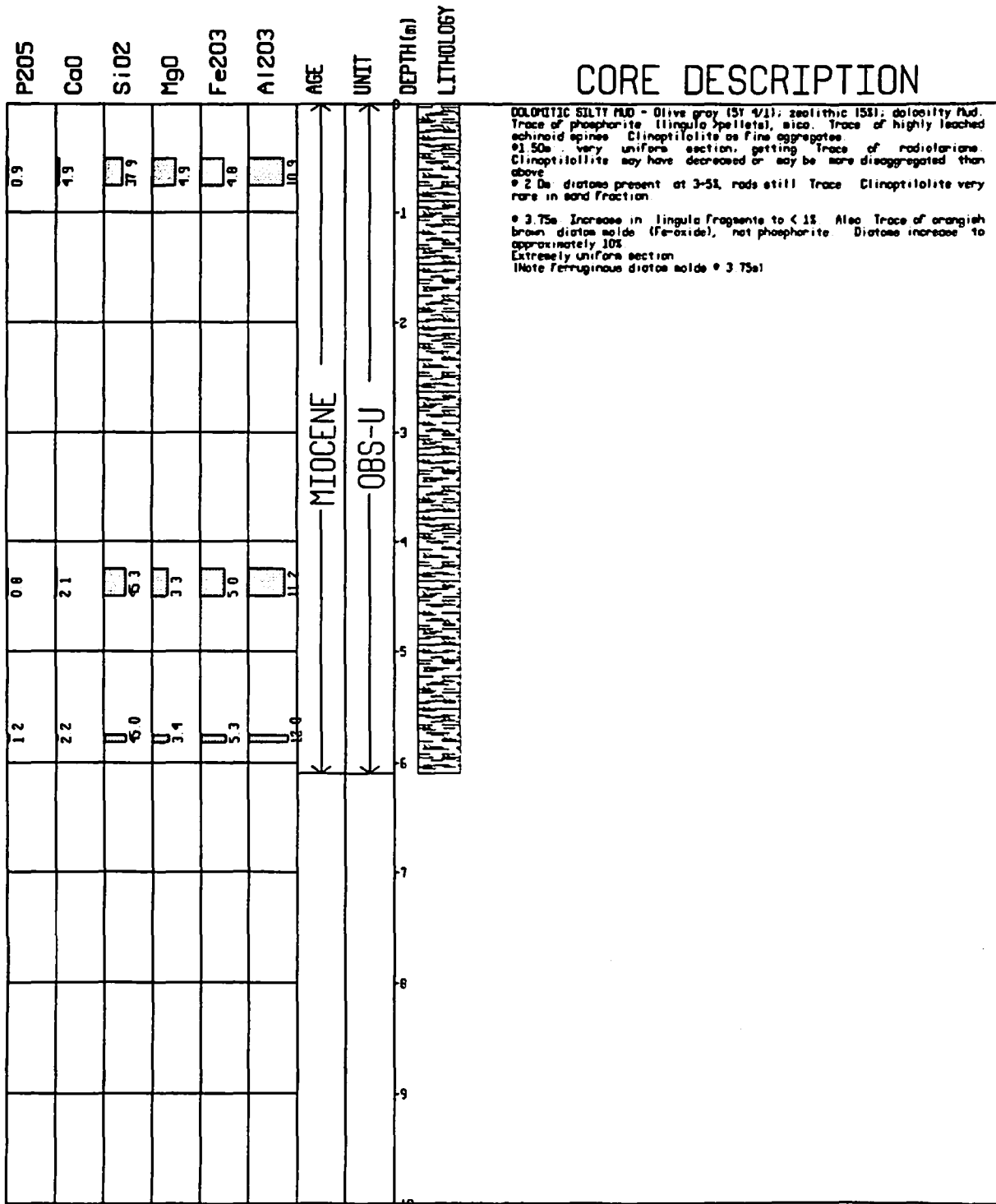
ONslow BAY CORE NUMBER: OB-15

CRUISE: NSF S. O. BAY DATE LOGGED: 5-10-86 LATITUDE: 33d 42.8'
 LENGTH ATTEMPTED: 1.80 BY: P. MALLETT LONGITUDE: 77d 36.2'
 LENGTH OF CORE: 1.90

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						← MIocene →	← OBS-U →	0		<p>SLIGHTLY PHOSPHATIC DOLOMITIC FINE SAND - Olive gray (5Y 4/1); phosphatic (5-7%), siliceous (5-7%), foraminiferal (15-20%), very fine angular to subangular, dull (dirty **), quartz sandy (20%), dolosilty (20%) mud. Trace of siliceous faecile spicules and rods (very abundant for P.R.) Phosphorite is highly leached, pitted, hollowed pellets and intraclasts light to dark brown, skeletal, and internal solids of Lenticulina common. Forams are rotten--abraded, fragmented. Tend to lose a lot in washed samples since rotten, mostly benthic. Quartz has mud (?) coatings, giving it a dull, dirty appearance. Very abundant dolomite rhombs seen @ 60x magnification after treating bulk sed with 10% HCl.</p> <p>@ 60x forams preservation increasing though still poor. Fairly abundant clinoptilolite noted, mostly as fine solid fragments. May be 10-15% of total sediment.</p> <p>@ 90x siliceous microfossils are absent, phosphorite shows only slightly leached texture or is smooth, dark to medium brown. Pellet < skeleton + intraclasts. Forams are slightly encrusted with dolomite rhombs (externally, clinoptilolite is internal).</p> <p>@ 120x Phosphorite = dark brown, mostly unleached. Forams increase as preservation increases. Still abundant clinoptilolite though contained within the forams tests. No rods or diatoms in sand fraction. Rare spicule noted.</p> <p>@ 150x Forams become very rotten. Appear to constitute 10-15% of bulk sediment, however = (trace to 0%) in washed sample due to fragility. Phosphorite shows no increase in dissolution.</p> <p>@ 180x Forams are absent in bulk sediment and washed samples, however clinoptilolite solid fragments very abundant. Phosphorite mostly unleached.</p> <p>**Much of dirty quartz may be clinoptilolite co-occure with siliceous fossils.</p> <p>Note Good lenticulina (Phosphorite) solids at top of core and natural eggshells--need some SEM work.</p> <p>Note Siliceous faecile only appear in upper portion of core. Good clinoptilolite. This is obviously FPF #2, and not a distinct unit as was suspected by an assumed high siliceous faecile content in Core Moles OB 15, 16, 17, and 62.</p> <p>@No distinct dissolution profiles--may warrant detailed investigation.</p>
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								10		

ON SLOW BAY CORE NUMBER: OB16

CRUISE: NSF S. O. BAY DATE LOGGED: 11-14-84 LATITUDE: 33.685 degrees
 LENGTH ATTEMPTED: 3.4m BY: P. MALLETT LONGITUDE: 77.623 degrees
 LENGTH OF CORE: 6.10m



ONslow BAY CORE NUMBER: OB-17

CRUISE: NSF S. O. BAY DATE LOGGED: 9-13-84 LATITUDE: 33d 42.4'
 LENGTH ATTEMPTED: 5.2 BY: P. MALLETTE LONGITUDE: 77d 34.2'
 LENGTH OF CORE: 6.3

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE		1	[Lithology sketch]	SLIGHTLY PHOSPHATIC GRAVELLY MEDIUM SAND - Variegated (typical Holocene). slightly phosphatic (1-2%), shell (3%) and quartz (7%) gravelly, shelly (13%) and medium, subangular quartz sand. Fresh orange, and black stained shell fragments and forams. phosphorite as fine, medium to dark brown pellets, glossy. Sediment coarsens downward, becoming a sandy, quartz gravel by 0.50m- gravel approximately 30% becoming muddy and slightly grayish at 1.15m, grading into (at 50m) light olive gray (SI 6/1), slightly muddy (3-5%), slightly phosphatic (1-3%), fossiliferous (20-25%), well sorted, subrounded, fine to medium quartz sand. Diverse fossil assemblage. Benthic forams Quinqueloculina (dominant), Elphidium, sponges, siphonophores, bryozoans, echinoid spines and plates, bivalve shells and fragments delicate to robust unaltered to gray to black, bryozoans, barnacles, gastropods (coecum and others) - PLEISTOCENE SEDIMENT WITH REMOVED MIOCENE Distinct burrow fill bottling.
						PLEISTOCENE		2	[Lithology sketch]	
						MIOCENE	OBS-U	3	[Lithology sketch]	PHOSPHATIC DOLOMITIC MUD - Sharp contact @ 2.53m Light olive gray (SI 5/2), radiolarian phosphate, very fine quartz and forams sandy (5-10%), dolosility (10%) mud. Sand Fraction = 10% rods, 25% phosphate, 35% quartz, 30% forams, trace of diatoms. 1-3% sicc. Phosphate is highly leached, pitted, hollowed, dull, pithy, tan. Forams may be somewhat encrusted with silt sized clear dolomite, though preservation is very good (no dissolution). Includes dominant forams resembling Florilus (planispiral, slightly involute), siphonophores, and Balbina. Rods = "spheres and helixes". @ 3.10m rods decreased to 1-1% of sand fraction. Diatoms increase to approximately 5% sand fraction. Beginning to get phosphatic forams (trace sand fraction though all planktonics are coated) and initial development of phosphatic internal molds--most still retain primary test material, these = trace of sand fraction, most benthics unaltered moderately well preserved. @ 4.10m internal molds of Lenticulina have been steadily increasing downward though still only trace to 1%. Must be reworked from FDF #2 as majority of forams are unaltered = moderately well preserved. Forams have increased to 15% total sediment. sand fraction (20-30% total sed) = 60% forams, 30% quartz, 5% phosphorite (as molds, skeletal and highly leached allochems). 5% diatoms, rods, sponge spicules. @ 4.50m forams continue to increase 15-20%, mostly benthic, very few planktonics. Diatoms and radiolarians virtually absent. @ 4.90m skeletal phase (lingula, base) increases somewhat (1% total sediment) though noticeably, intraclastic and pelletal phosphorite (fine to medium) is darker in general though some light highly leached grains remain. Phosphatic internal molds of Lenticulina reach a maximum at 5.0-5.20m, decrease very abruptly, and are absent below 5.60m. Lenticulina show better preservation, though still thin walled when dissolved in HCl, reveal infillings of dolosility mud and bladed xlc (probably clinoptilolite). All phosphatic material decreases below approximately 5.20m skeletal, intraclastic, and molds.
								4	[Lithology sketch]	
1.8	12.4	32.2	4.1	2.6	6.9			5	[Lithology sketch]	
								6	[Lithology sketch]	
1.2	13.5	10.0	2.3	2.2	2.7			7	[Lithology sketch]	
								8	[Lithology sketch]	
								9	[Lithology sketch]	
								10	[Lithology sketch]	

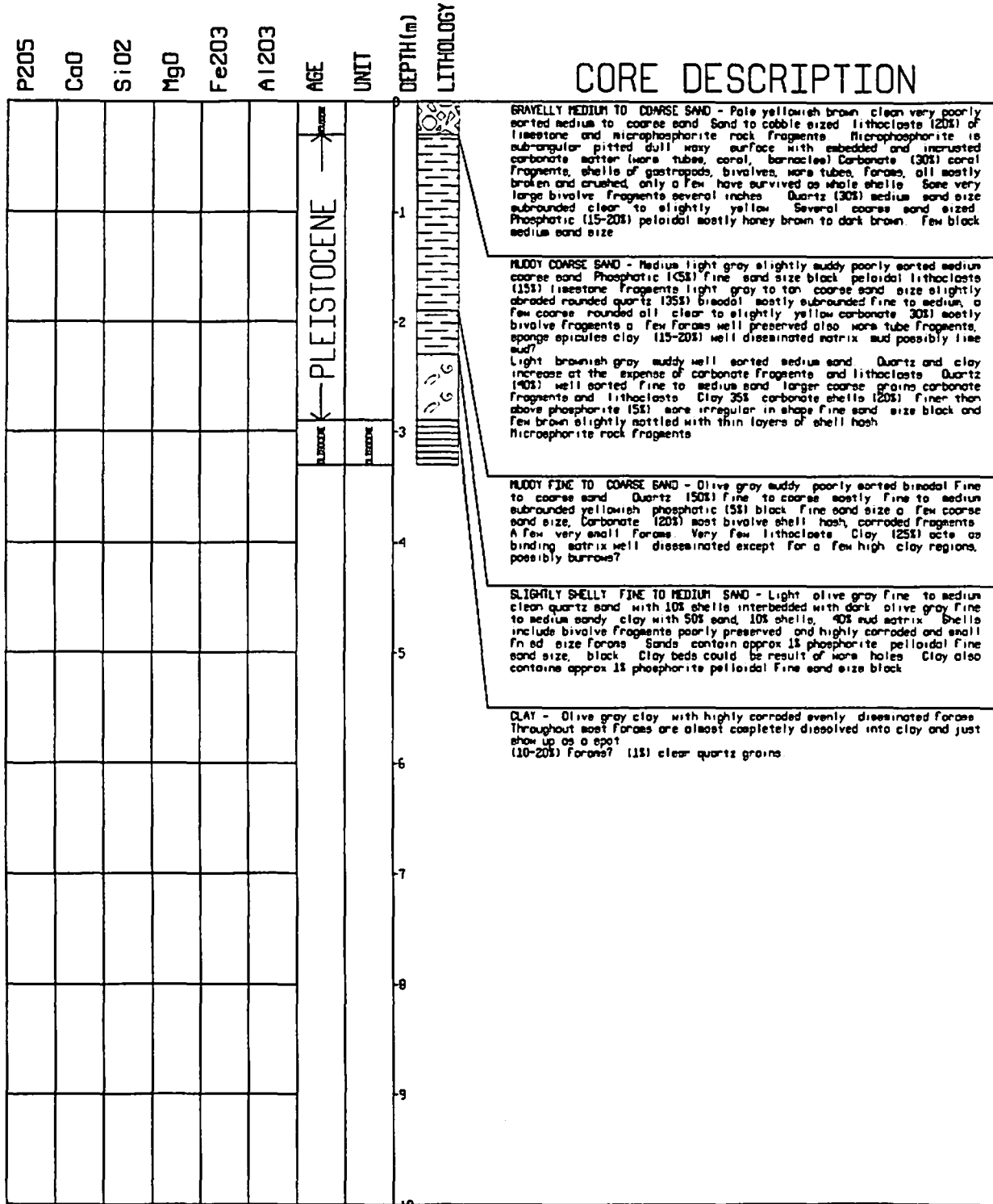
ONslow BAY CORE NUMBER: OB-20

CRUISE: NSF S. D. BAY DATE LOGGED: 9-11-84 LATITUDE: 33d 45.2'
 LENGTH ATTEMPTED: 4.4 BY: P. MALLETT LONGITUDE: 77d 36.8'
 LENGTH OF CORE: 6.09

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						PALEOZOIC		-1	PS-2	<p>SLIGHTLY PHOSPHATIC LIMESTONE - Dark yellowish orange (10TR 6/6) becoming Pale yellowish orange (10TR 8/6) then Very pale orange (10TR 8/2) with depth, quartz bearing (33); phosphatic (53); bioclastic calcarenite. *Previously logged as coralline algal calcarenite; clasts are unrecognizable to us however. Phosphorite is light orange-brown to black, translucent, glossy pellets > intraclasts. Occasional gravel sized (up to 10mm) intraclast. Sharp contact @ 0.75m</p>
						MIOCENE		-2		<p>PHOSPHATIC FORAMINIFERAL MUD - Olive gray (5T 4/1), phosphatic (1-3%), very fine to fine, angular quartz bearing (5%), Foraminiferal (25%), mud (65-70%). Phosphorite as very dark brown to black, very glossy, pellets and minor skeletal. Forams show some recrystallization (druzy), dissolution is minimal as Lenticulina is present without dissolution pits. Also Siphogenerina, Bulimina, Bolivinitids and other coiling benthics—P.B. = 2.1</p> <p>Good clinoptilolite in forams, internal molds very rare to absent. Clinoptilolite noted when dissolving forams in HCl, also visible in broken chambers.</p> <p>@ 1.25m Phosphorite increases to 5-10%, occasional coarse to very coarse intraclast. Becoming sandier. Mud = 40%, quartz up to 15%, phos increasing downward. 15% @ 1.60m. Clinoptilolite still present in forams.</p> <p>@ 1.90m occasional phosphatic internal mold of Lenticulina and siphogenerina. Though 95% of forams are unaltered (except clino infillings). Relative % of skeletal and medium to very coarse intraclastic grains increasing downward. Becoming muddier (>50%) CO3 cemented lithoclasts (1cm) at 2.30 and 2.37m upon breaking clinoptilolite observed in voids and along plane of breakage. Phosphorite to 20-25% at 2.60m. Occasional carbonate cemented lithoclast in sand fraction. Becoming sandier below 5.0m.</p> <p>Phosphorite increases to 25-30% at 5.0m.</p> <p>@ 5.30m. Mud decreases to 35-40%. Phos subsequently increases to 30-35%. NOTE CORE FALLS WITHIN FPS-2 MAP AREA, THOUGH PHOSPHATE REACHES 35% AT BOTTOM (P205 = 12% IN BULK ROCK SAMPLE). CLINOPTILOLITE FOUND THROUGHOUT CORE IN FORAMS THOUGH SPARSE AT BOTTOM. FPS-1 HAS THIS TYPE CLINOPTILOLITE IN OB64. ABUNDANT SIPHOGENERINA THOUGHT BOTTOM STILL PROBABLY FPS-1.</p>
								-3		
								-4		
								-5		
								-6		
								-7		
								-8		
								-9		
								-10		

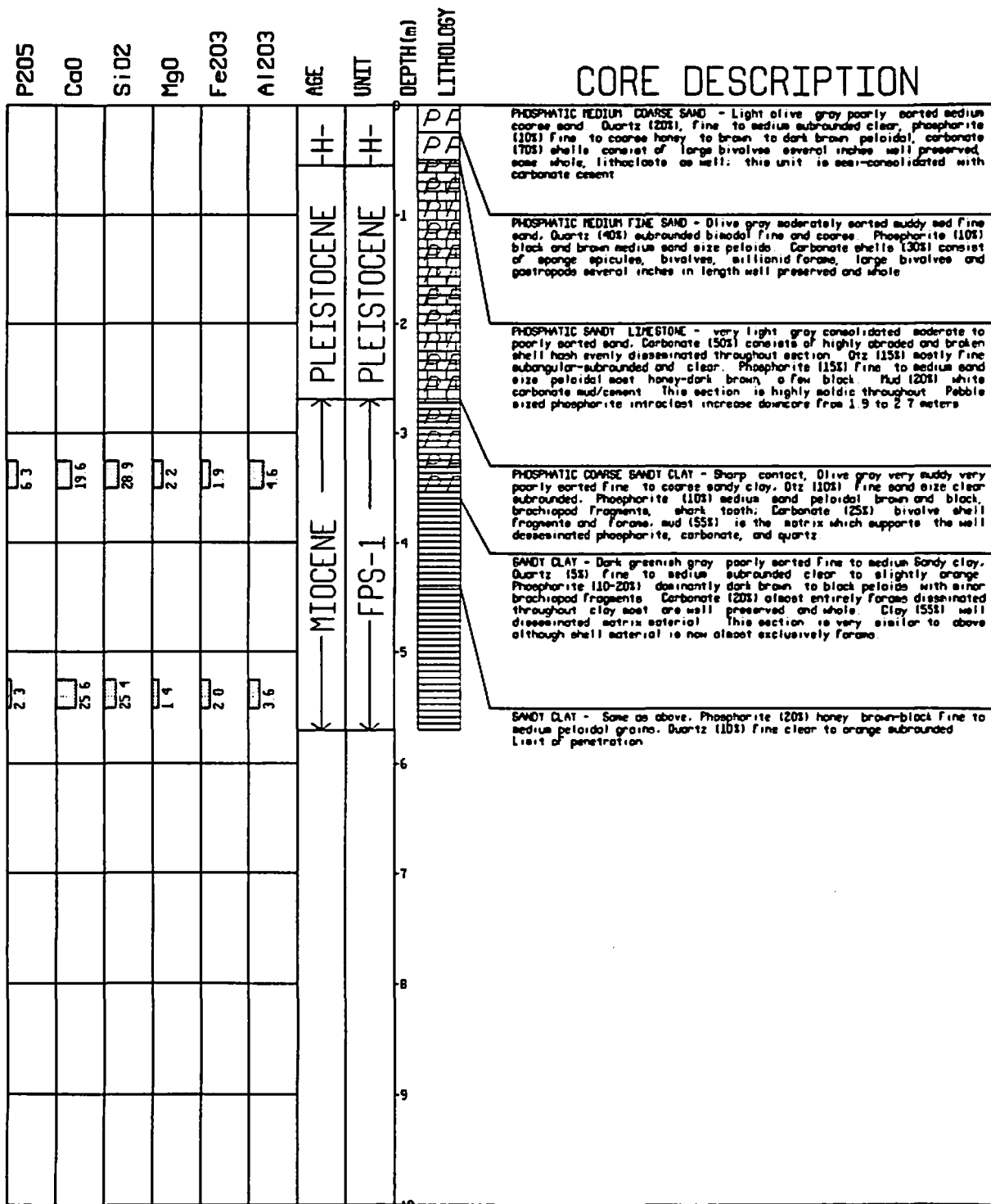
ON SLOW BAY CORE NUMBER: OB-21

CRUISE: NSF O. BAY DATE LOGGED: 6-2-90 LATITUDE: 33d 46.3'
 LENGTH ATTEMPTED: 3.1 BY: D. YEATES LONGITUDE: 77d 37.6'
 LENGTH OF CORE: 3.3



ONSLow BAY CORE NUMBER: OB-22

CRUISE: NSF O. BAY DATE LOGGED: 6-20-90 LATITUDE: 33.763 degrees
 LENGTH ATTEMPTED: 4.5m BY: D. YEATES LONGITUDE: 77.625 degrees
 LENGTH OF CORE: 5.7m



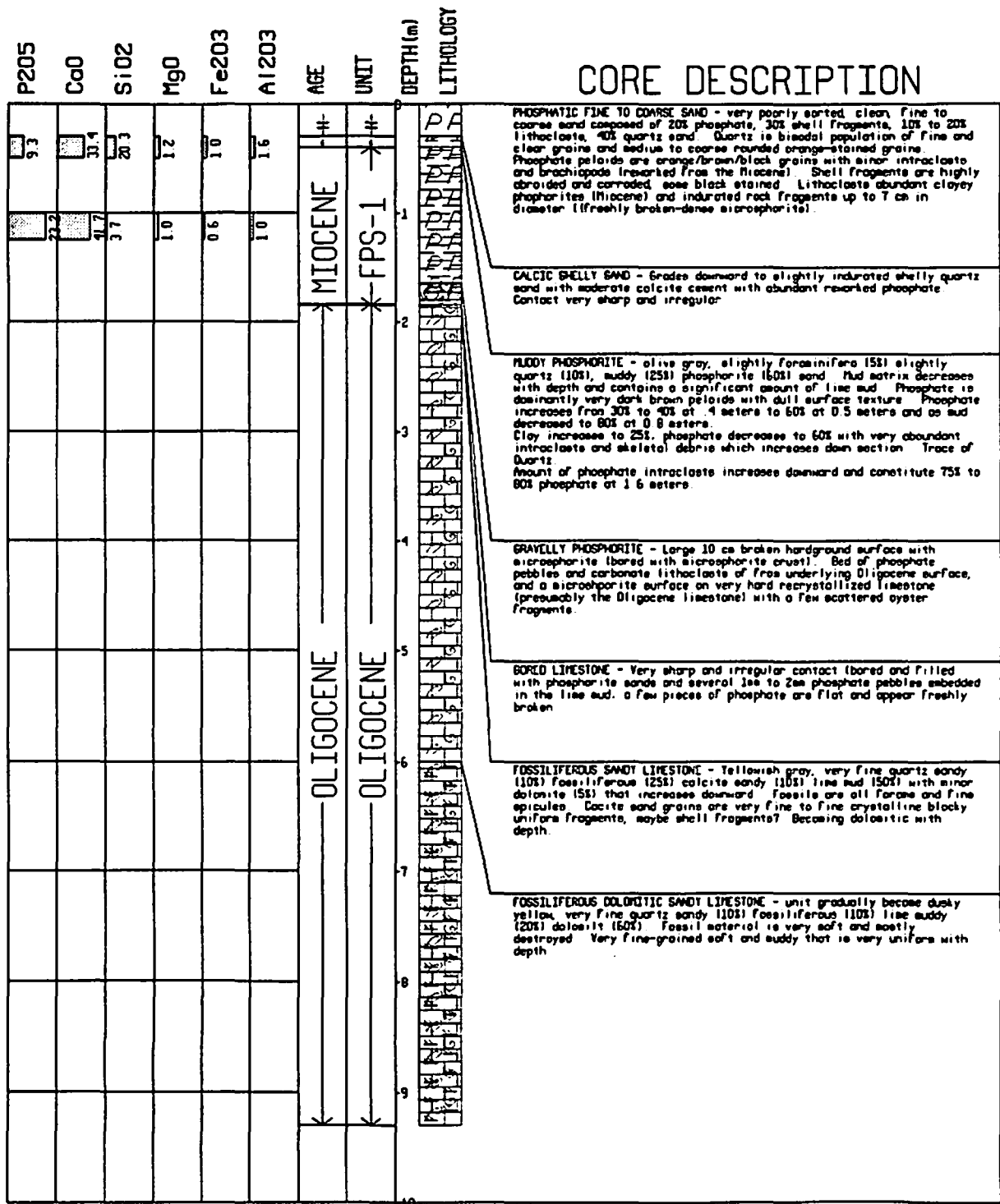
ONslow BAY CORE NUMBER: OB-23

CRUISE: NSF O. BAY DATE LOGGED: 6-20-90 LATITUDE: 33.815 degrees
 LENGTH ATTEMPTED: 2.4m BY: S. RIGGS LONGITUDE: 77.612 degrees
 LENGTH OF CORE: 2.93m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY	CORE DESCRIPTION
						←	←	0	P	PHOSPHATIC SHELLY COARSE TO FINE SAND - Light olive gray, very clean, phosphatic (110-15%), coarse shelly (15%), fine-coarse qtz sand. Quartz is sized very fine clear and medium to coarse orange stained, shells sized corroded to fresh bivalves and forams, phosphorite is sized orange peloids and black intracrysts and skeletal grains
						←	←	1	P	BURNED MEDIUM SAND - Transition zone gray sand as below with burnout of coarser and orange-tinted sand from above throughout--decreasing downward.
						←	←	2	P	PHOSPHATIC SHELLY MEDIUM SAND - Light gray, silty clayey (2-3%) shelly (15-10%) phosphatic (15%), medium quartz sand. Slight clay matrix, shells generally non-corroded and non-stained, fairly delicate bivalves. Phosphorite is all very dark brown to black fine peloids. Clay content increases downward with irregular laminae containing up to 10-20% clay and number of laminae increase downward to the dominant sediment at the contact. Sharp contact at 1.35
						←	←	3	P	SLIGHTLY PHOSPHATIC DOLOMITIC CLAY - Grayish olive, slightly phosphatic (1-2%), dolocality (10-20%), forams (30%) clay (40-50%) Grades downward. Dusky yellow brown dolocality (5%), phosphatic (15-10%), forams (15%) clay (70%)
						←	←	4	P	Phosphorite is dominantly dark brown peloids with minor intracrysts and brach fragments. Quartz (trace) grains of variable size, forams disseminated through and soft and poorly preserved, dolomite crystals silt sized crystals in thin stringers and irregular pods. 2% phosphorite increases to 10-12%, phosphorite grains are disseminated with higher concentrations in the dolocality zones than in the clayey zones. Clay contains a fair amount of fine and/or degraded forams (?). Below 1.5m, this unit is very uniform in texture to bottom of core. Limit of penetration. This core appears to represent the upper portion of the transgressive facies of FPS-1. The rich phosphate facies should be at depth--too bad we couldn't get the vibracore any deeper here!
						←	←	5	P	
						←	←	6	P	
						←	←	7	P	
						←	←	8	P	
						←	←	9	P	
						←	←	10	P	

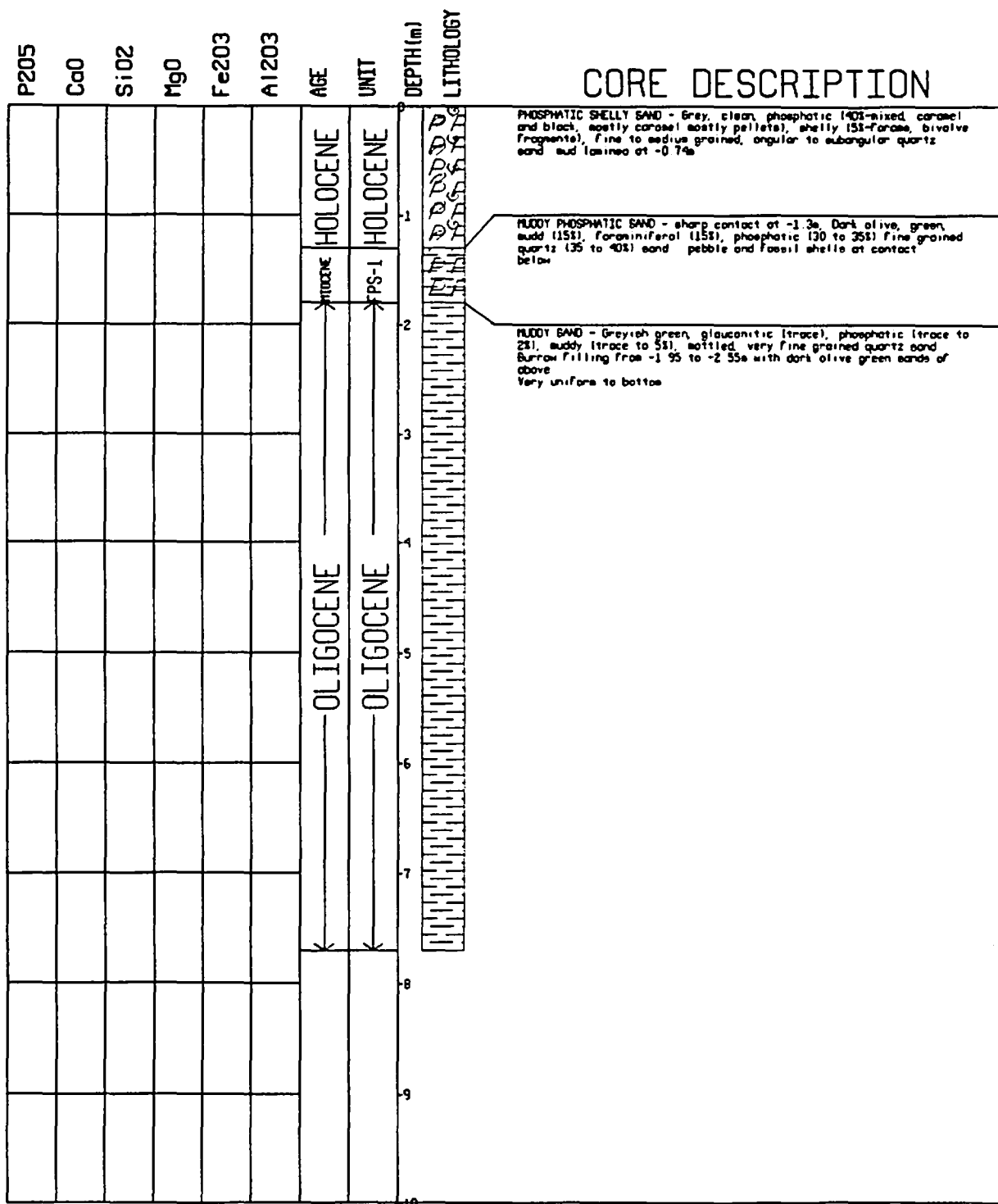
ON SLOW BAY CORE NUMBER: OB-24

CRUISE: NSF O. BAY DATE LOGGED: 6-19-90 LATITUDE: 33.780 degrees
 LENGTH ATTEMPTED: 6.1m BY: S. RIGGS LONGITUDE: 77.622 degrees
 LENGTH OF CORE: 9.3m



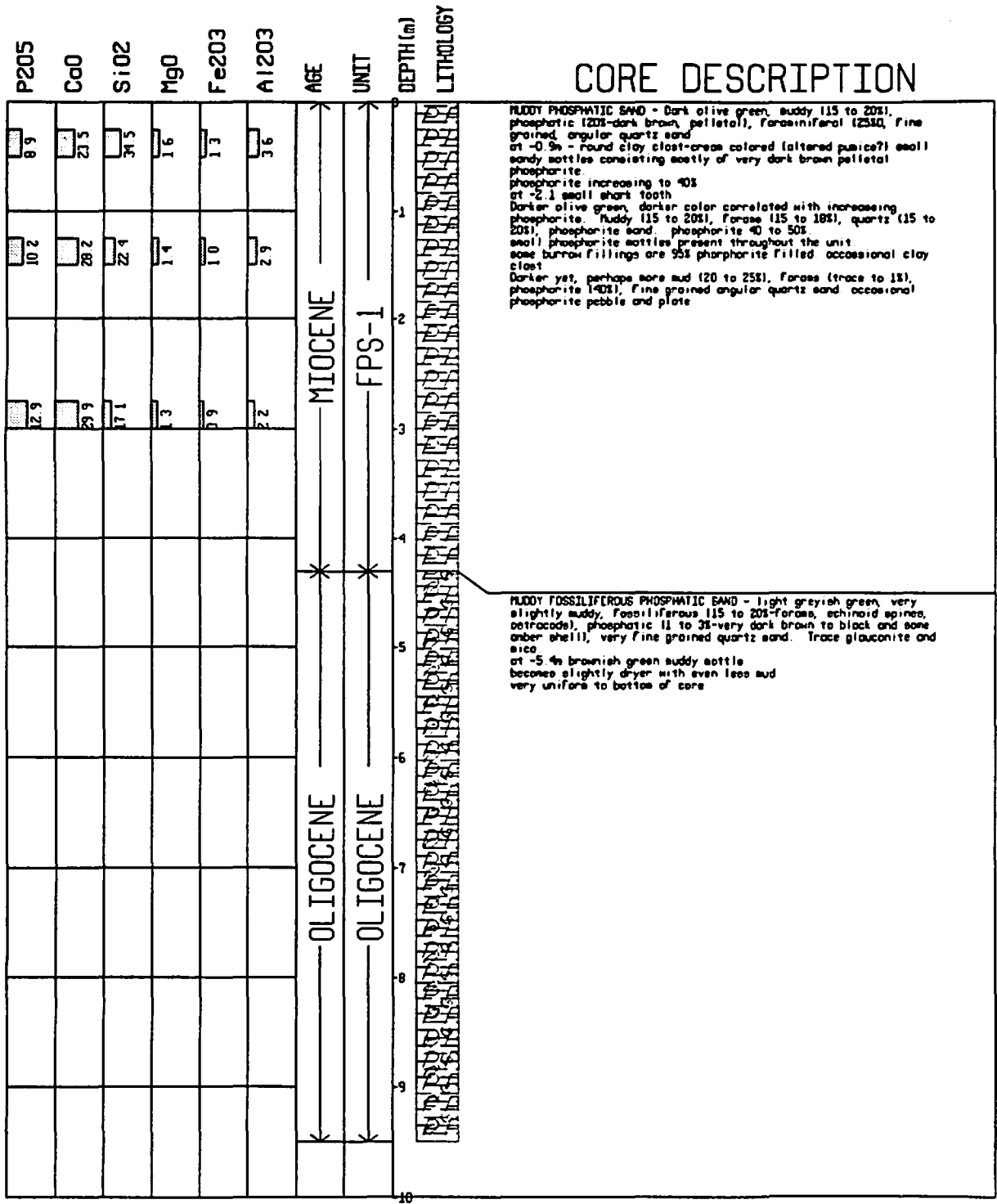
ONslow BAY CORE NUMBER: OB25

CRUISE: NSF 0. BAY DATE LOGGED: 8-22-80 LATITUDE: 33.847 degrees
 LENGTH ATTEMPTED: 5.5m BY: D. Lewis LONGITUDE: 77.585 degrees
 LENGTH OF CORE: 7.7m



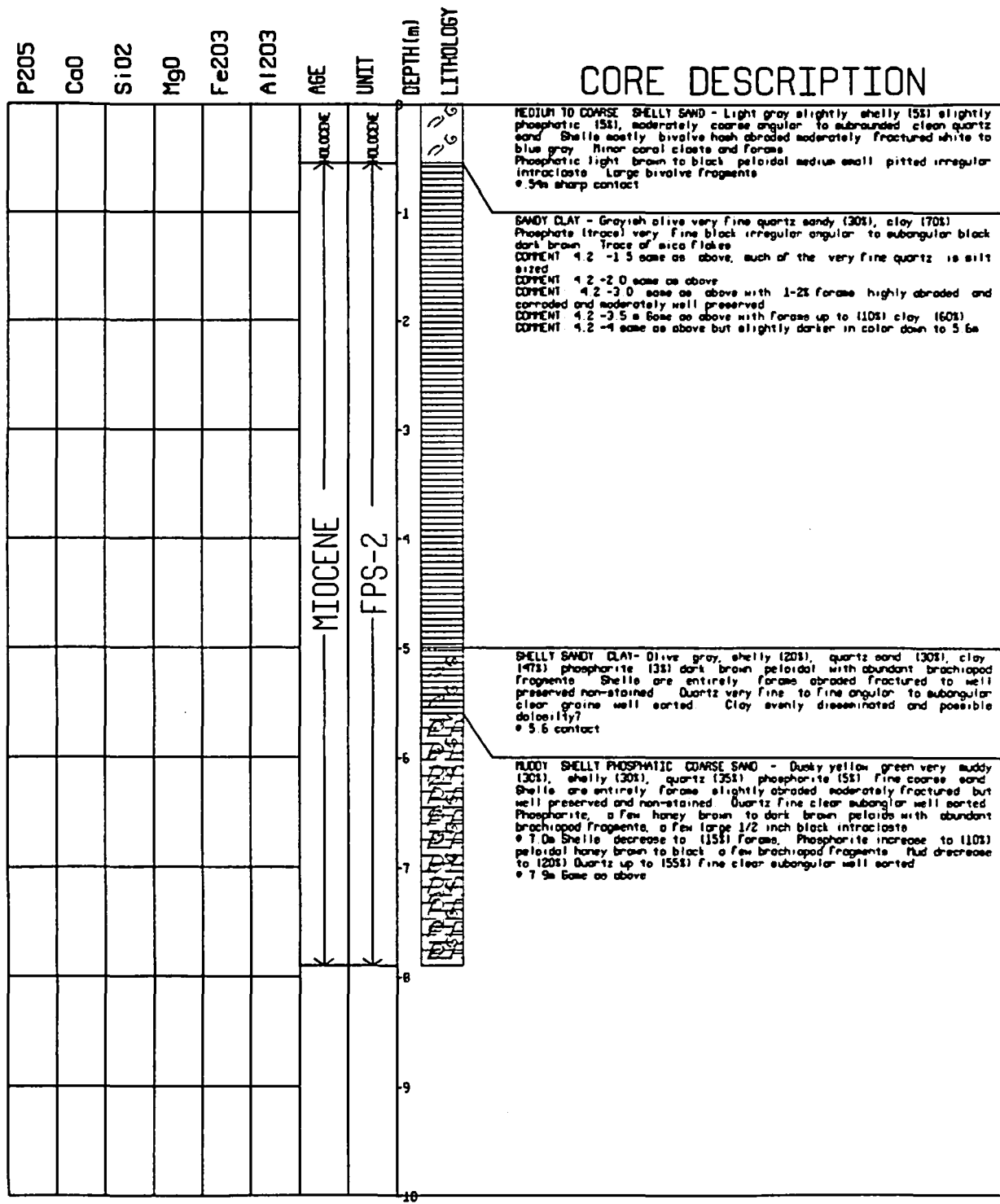
ON SLOW BAY CORE NUMBER: OB26

CRUISE: NSF 0. BAY DATE LOGGED: 8-22-80 LATITUDE: 33.843 degrees
 LENGTH ATTEMPTED: 5.5m BY: D. LEWIS LONGITUDE: 77.560 degrees
 LENGTH OF CORE: 9.5m



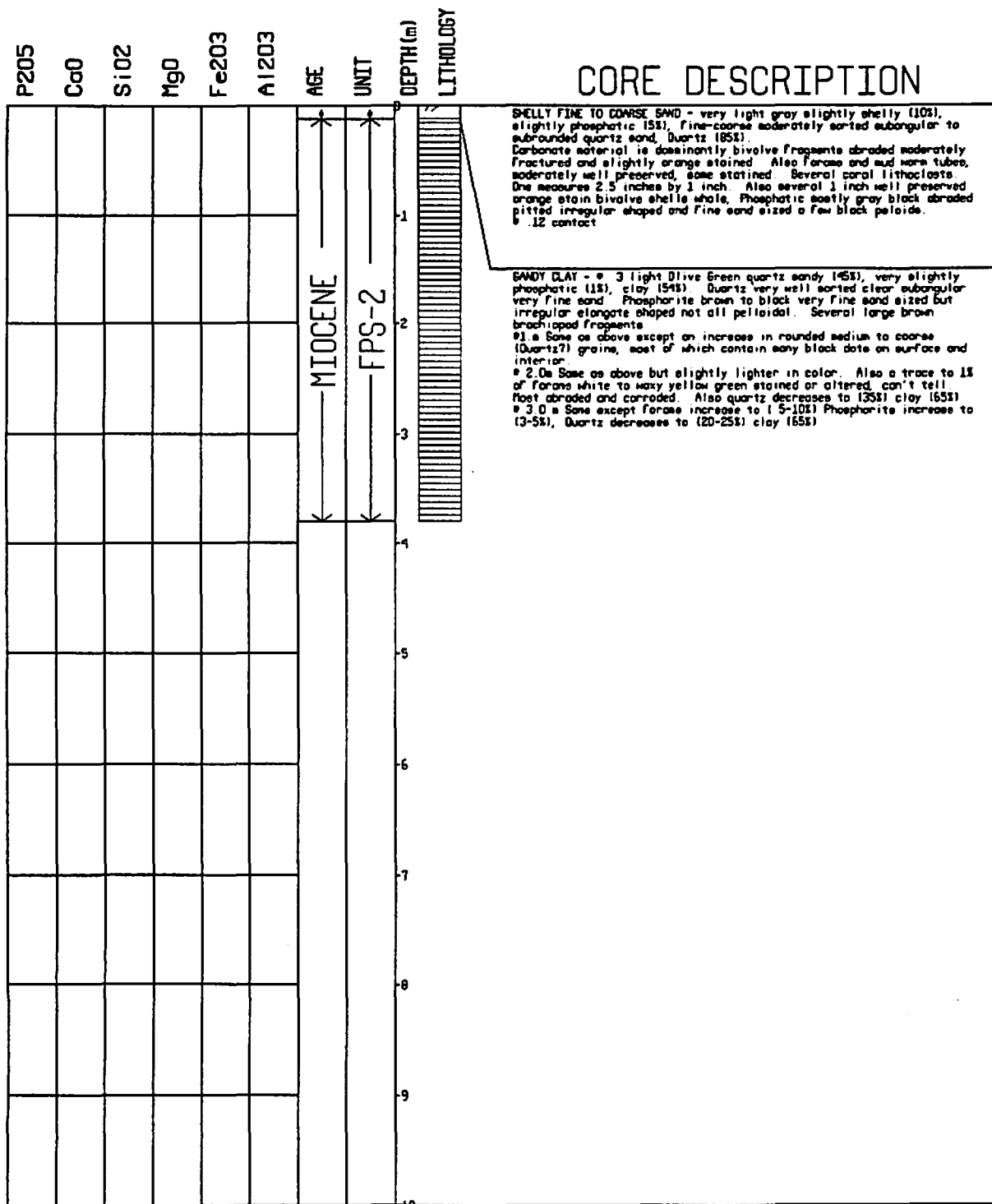
ON SLOW BAY CORE NUMBER: OB-27

CRUISE: NSF O. BAY DATE LOGGED: 6-28-90 LATITUDE: 33.842 degrees
 LENGTH ATTEMPTED: 4.6m BY: D. YEATES LONGITUDE: 77.533 degrees
 LENGTH OF CORE: 7.9m



ON SLOW BAY CORE NUMBER: OB28

CRUISE: NSF O. BAY DATE LOGGED: 6-27-90 LATITUDE: 33.832 degrees
 LENGTH ATTEMPTED: 2.3m BY: D. YEATES LONGITUDE: 77.528 degrees
 LENGTH OF CORE: 3.8m



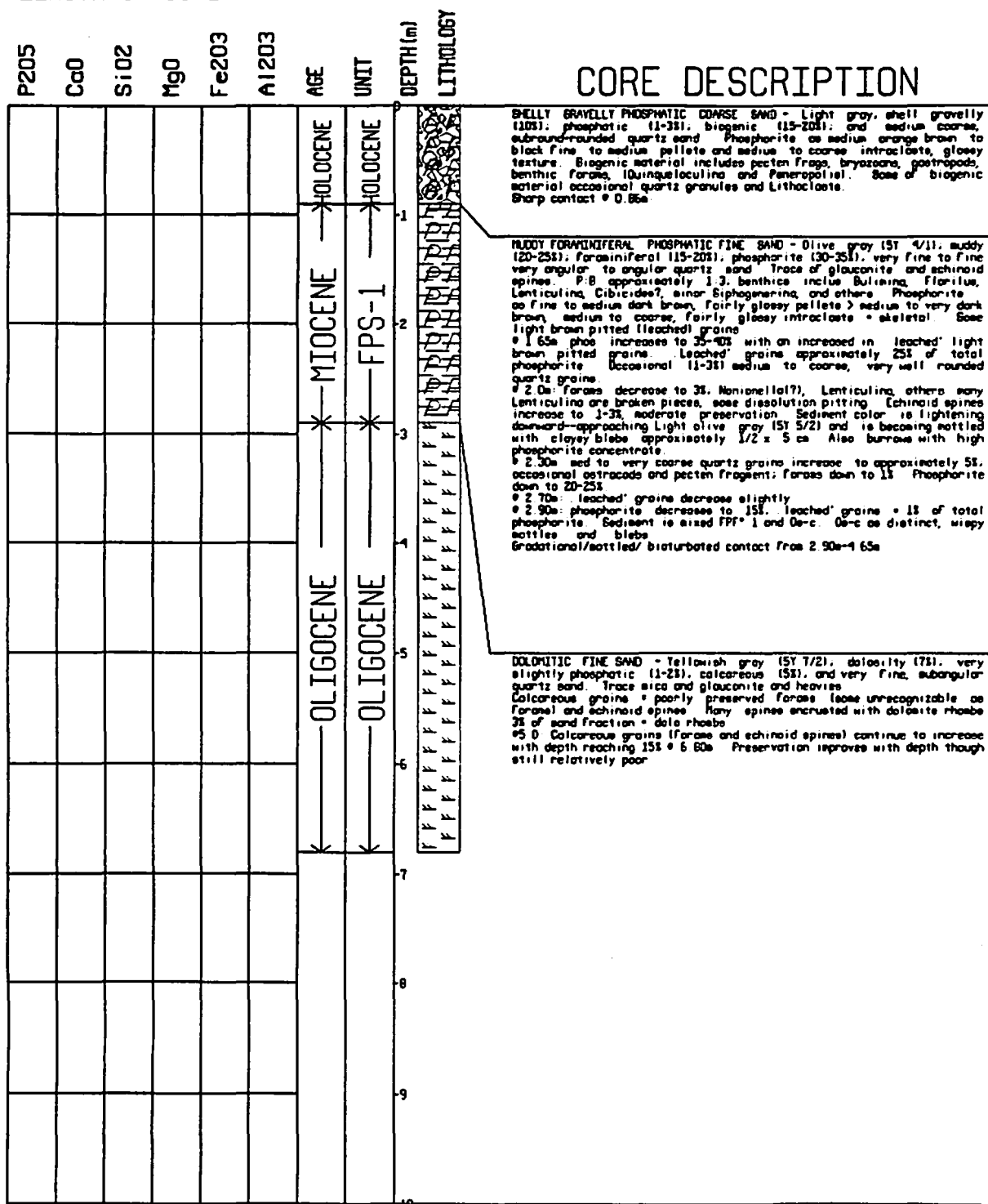
ONSLow BAY CORE NUMBER: OB-29

CRUISE: NSF S. O. BAY DATE LOGGED: 9-13-84 LATITUDE: 33d 52.4'
 LENGTH ATTEMPTED: 3.7 BY: P. MALLETT LONGITUDE: 77d 32.1'
 LENGTH OF CORE: 3.86

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY	CORE DESCRIPTION
0.8	21.9	41.5	0.8	0.3	8.5	HOLOCENE		0		<p>SLIGHTLY PHOSPHATIC SHELLY MEDIUM SAND - light olive gray (5Y 6/1); slightly shell gravelly (1-2%), calcareous lithoclastic (5%), all phosphatic (1-2%); shelly (20%); medium, subround, well sorted quartz sand. Biogenic sediment appears to be both reworked Pleistocene and Recent. MUD is black to gray stained, also fresh. Diverse assemblage. Phos = fine to medium pellets, black to brown, glossy (dominantly black). @ 1.0m becoming calcareous suddy (5%), shell gravelly (5%); slightly phosphatic (1-2%), calcareous lithoclastic (3-5%), shelly (10%); very fine to very coarse, subround-round, quartz sand. Typical Pleistocene i.e., gray color (carbonate staining = gray to black), calc-suddy. Fauna abundant: caecum gastropod, Peneroplis forams, occasional carbonate acid, poorly sorted quartz.</p> <p>@ 1.50m Phosphorite increases to 3-4%; presence of a few (trace) "buggered up" Siphonogenerina indicates reworked Miocene. Quartz sand becomes better sorted with depth, generally fine, though bimodal as coarse to very coarse grains = 5.</p> <p>Sharp contact @ 2.75m</p>
						PLEISTOCENE		1		
						PLEISTOCENE		2		
3.4	15	15	1.1	1.3	1.3	MIOCENE	FPS-2	3		<p>PHOSPHATIC SANDY MUD - Olive gray (5Y 4/1); phosphatic, foraminiferal and very fine quartz sandy (15-25%); sticky mud. Trace of glauconite and heavy band fraction phos = 3-5%, very fine to fine medium to very dark brown, glossy pellets. Forams = 30-35%, PCB as Bolivinids, Siphonogenerina, Buliminella elegantissima, Buccella, Lenticulina, and others. Preservation is good. Lenticulina still retain keels. All forams may be infilled with pyrite or Fe-oxide (framboidal reddish-brown). No clinoptilolite in Forams.</p> <p>Phosphorite increases very slightly with depth.</p> <p>NOTE: SEE OB-29-B FOR CONTINUATION OF THIS HOLE</p>
								4		
								5		
								6		
								7		
								8		
								9		
								10		

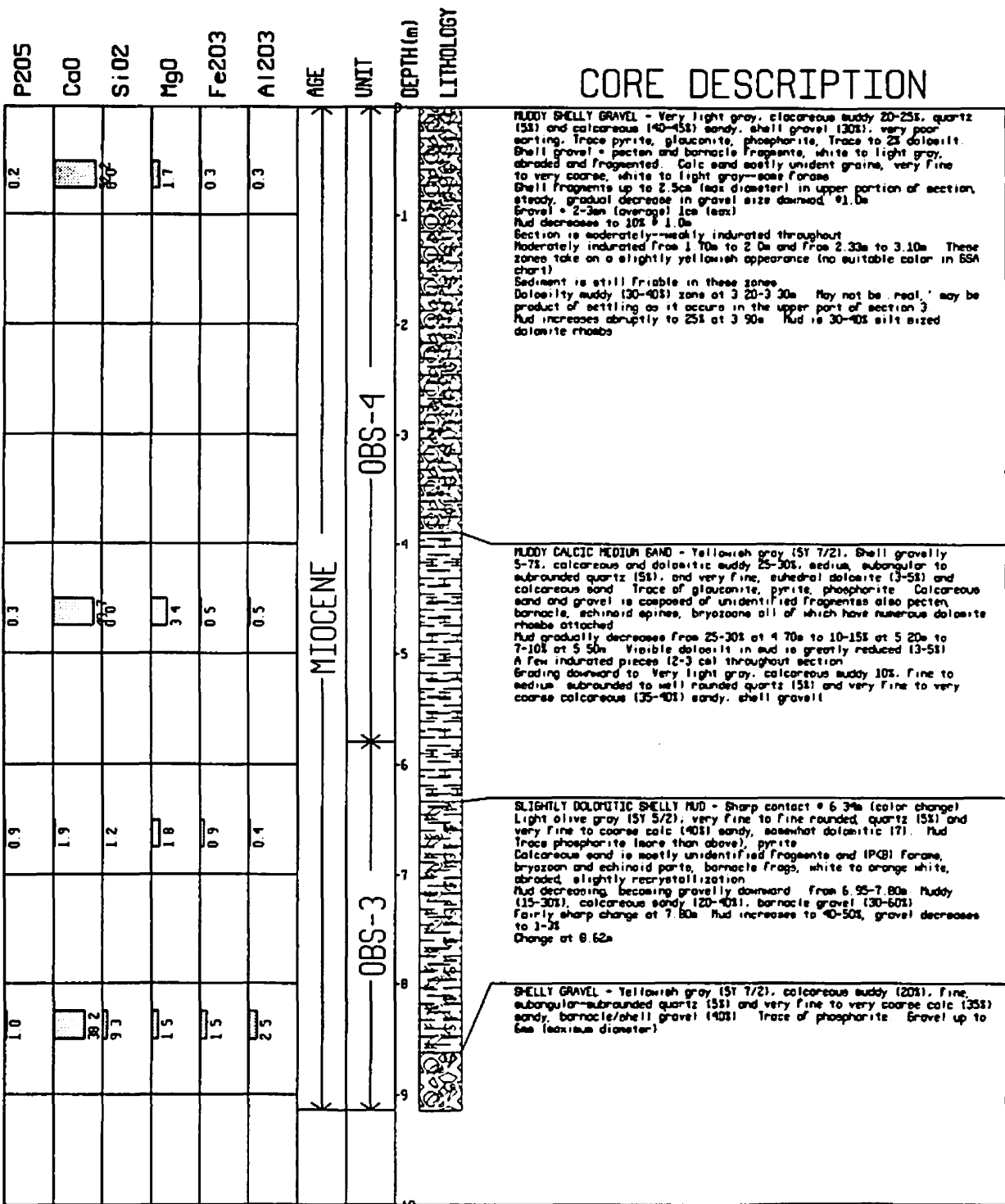
ON SLOW BAY CORE NUMBER: OB-30

CRUISE: NSF O. BAY DATE LOGGED: 9-35-84 LATITUDE: 33.917 degrees
 LENGTH ATTEMPTED: 5.1m BY: P. MALLETT LONGITUDE: 77.503 degrees
 LENGTH OF CORE: 6.8m



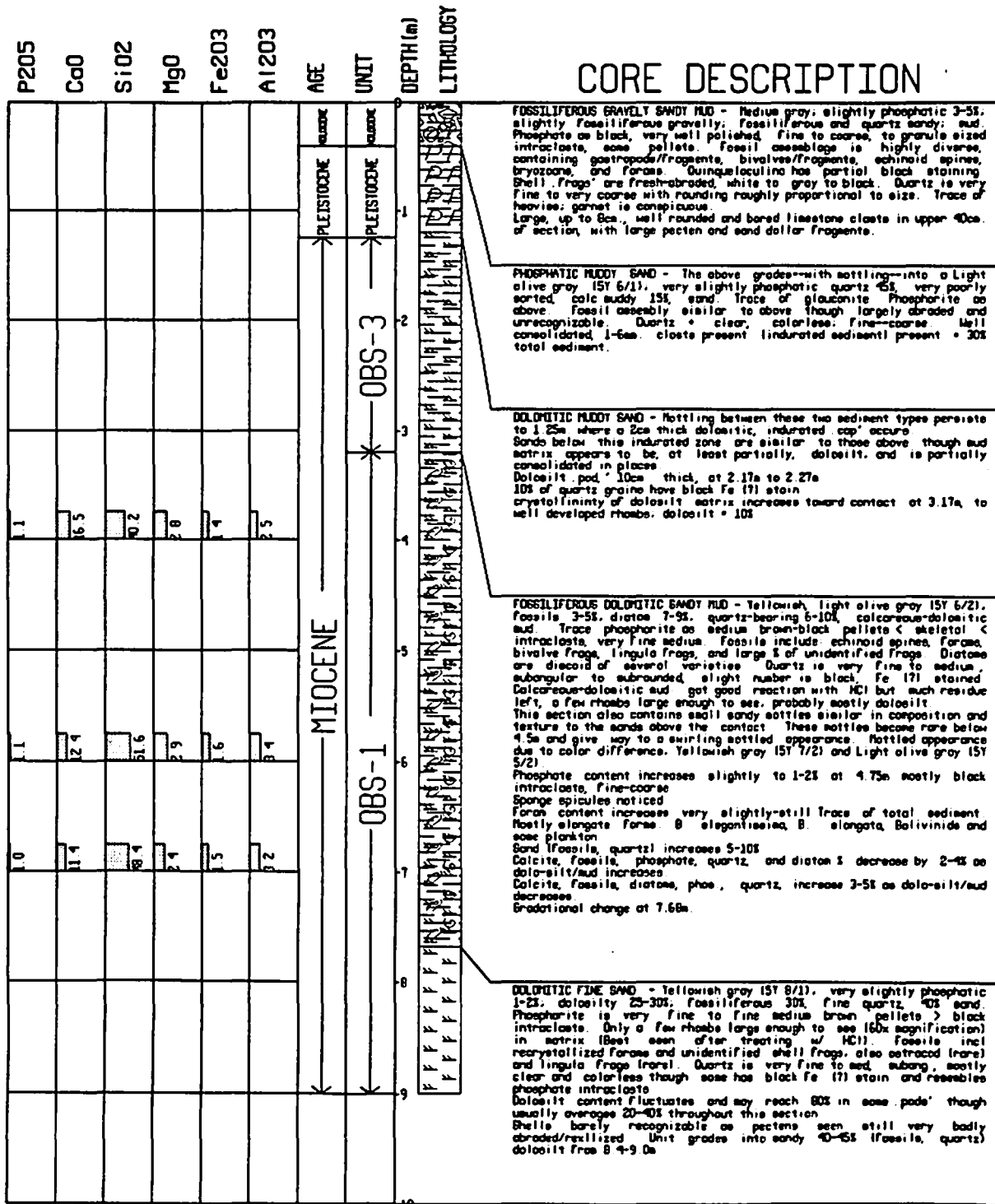
ON SLOW BAY CORE NUMBER: OB33

CRUISE: NSF N. O. BAY DATE LOGGED: 5-22-84 LATITUDE: 34.618 degrees
 LENGTH ATTEMPTED: 8.8m BY: P. MALLETTE LONGITUDE: 76.937 degrees
 LENGTH OF CORE: 9.15m



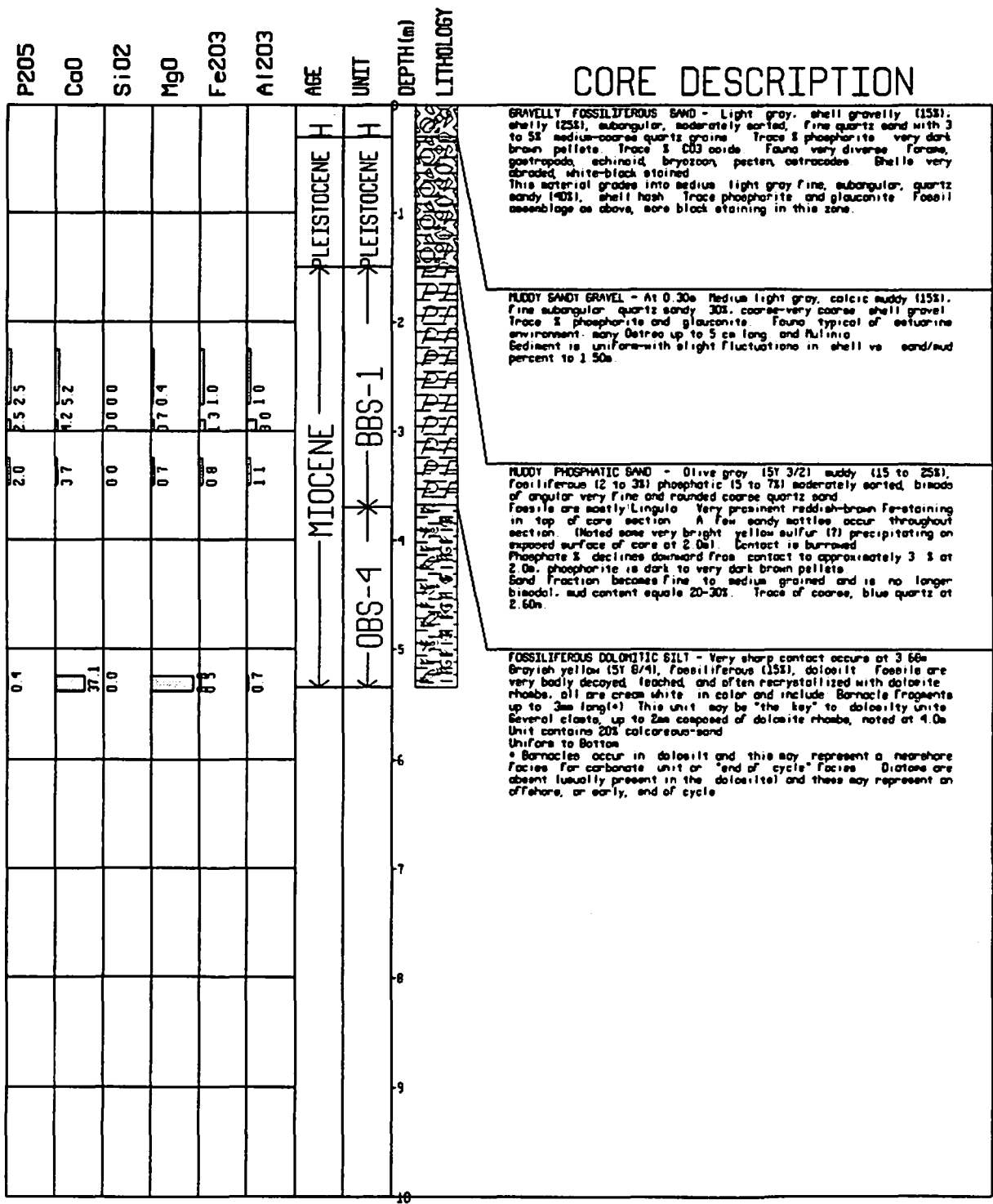
ON SLOW BAY CORE NUMBER: OB-34

CRUISE: NSF N. O. BAY DATE LOGGED: 12-29-83 LATITUDE: 34.610 degrees
 LENGTH ATTEMPTED: 6.8m BY: P. MALLETTE LONGITUDE: 76.970 degrees
 LENGTH OF CORE: 9.0m



ON SLOW BAY CORE NUMBER: OB36

CRUISE: NSF O. BAY DATE LOGGED: 1-26-84 LATITUDE: 34.625 degrees
 LENGTH ATTEMPTED: 4.2m BY: P. MALLETT LONGITUDE: 76.915 degrees
 LENGTH OF CORE: 5.35m



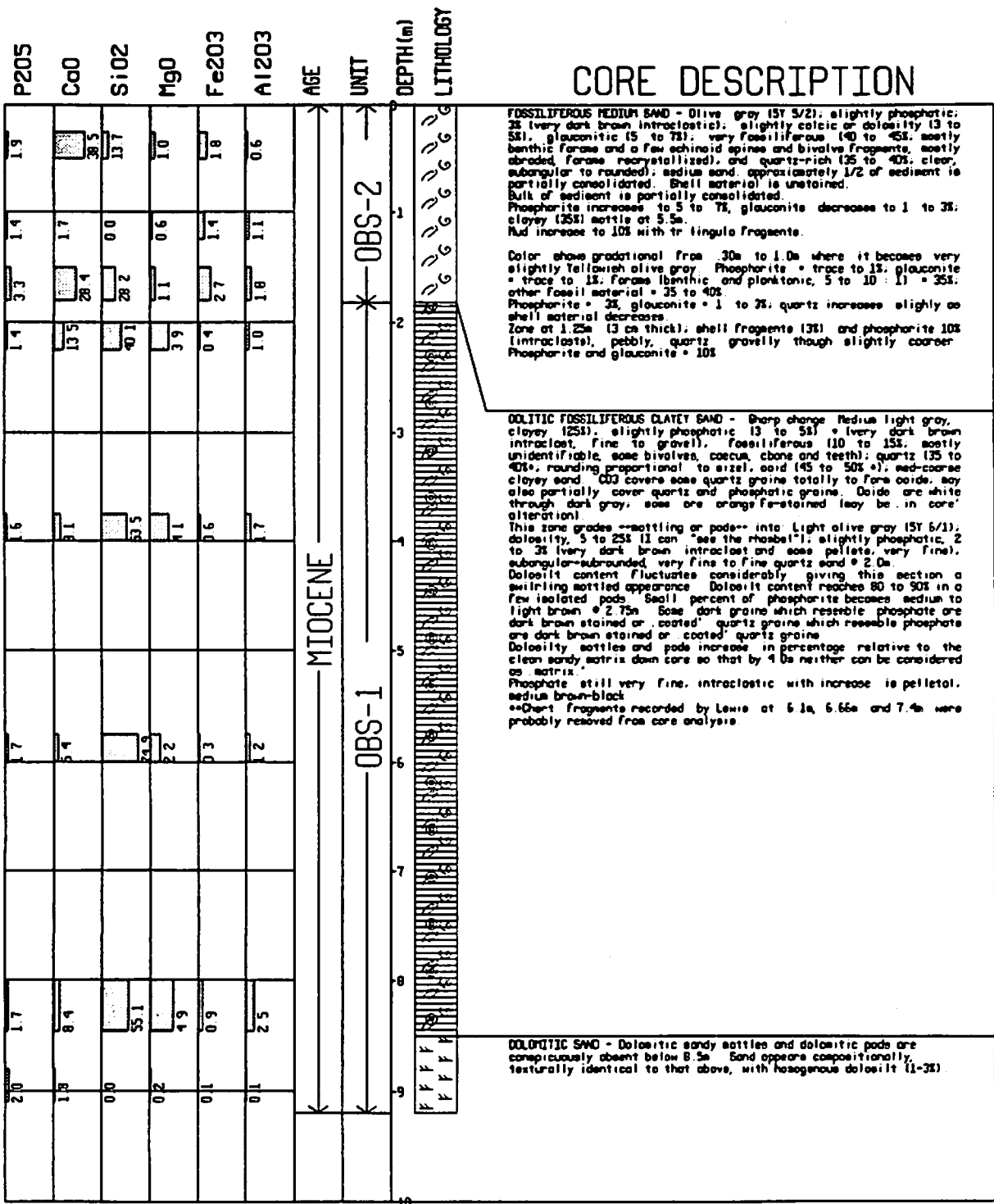
ON SLOW BAY CORE NUMBER: OB37

CRUISE: NSF O. BAY DATE LOGGED: 5-15-84 LATITUDE: 34.593 degrees
 LENGTH ATTEMPTED: 9m BY: P. MALLETTE LONGITUDE: 77.078 degrees
 LENGTH OF CORE: 9m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION	
						MIOCENE	FPS-5	0	0	FOSSILIFEROUS MUDDY SAND - Olive gray (5T 4/1), very slightly fossiliferous 1% decayed fragmental, slightly muddy 3-5% very fine to fine, subrounded, quartz sand Trace 1 each of heavy and phosphorite (granule sized intraclasts, pitted, and fine pellets) 5-7% medium to coarse quartz Fossils mostly unidentifiable Fragments of echinoid spines and planktonic forams Shell material increases gradually to 0.70m includes small bivalves and turritella Section is mottled with burrow structures Relatively clean sand and sandy matrix	
								1	1	Shell material increases abruptly at 0.70m Fragments of large bivalves (Mercenaria?), barnacles, turritella, scaphopods - 40-6% of sediment Fragments are white, abraded, bored Coarse to very coarse well rounded quartz (1-2%) Mud (1-2%)	
								2	2	Shell material decreases at 1.15m to 2%, mostly abraded, medium sized fragments, also fairly well preserved echinoid spines, and benthic forams (Elphidium, Florilus?), Mud - 3-5%, phosphorite - tr 1%, heavyes - < 1% A few clayey pods or clasts < 1 cm Sand displays better sorting at 1.60 m, very fine to fine, medium to very coarse grains are decreased Trace 1 glauconite noted Color becoming light olive gray (5T 5/2)	
								3	3	Shell material increases slightly at 1.90m to 3-4% mostly decayed fragments also well preserved planktonic and benthic forams, ostracodes, lingula, echinoid spines Mottling persists throughout with small clay clasts At 3.0m planktonic forams outnumber benthic though both combined are less than 1% Sand is very well sorted, very fine and subrounded Total shell material - 1-2% Mottling persists	
								4	4	At 4.60m increase in medium to very coarse quartz, still dominantly fine to very fine sand, increase in ostracodes (< 1%), echinoid spines A few severely pitted medium sized phosphatic intraclasts At 4.90m Planktonic and benthic forams still present, well preserved, though scarce, < 1% Ostracodes decreased, phosphorite - Trace percent very fine to fine pellets and intraclasts Mottling still distinct, clean sands with slightly muddy sands (3-8% mud) with small (< 1cm) clay clasts At 5.10m a few coarse to very coarse quartz grains, some blue and purple	
								5	5		
								6	6	*	CALCIC SANDY SHELL GRAVEL - Sharp contact at 5.36m, appears unconfusable due to sharp change and coarse to granule size quartz grains at contact Light olive gray (5T 6/1), calcareous (15%) and quartz (45%) sandy, shell gravel Trace percent phosphorite (dark brown-black polished intraclast), Trace percent heavyes Ostracodes, barnacle and bivalve fragments - white abraded, in sand fraction Quartz is very fine to very coarse, some granules Shell gravel is fragmented, robust bivalves (up to 3 cm piece) This section is very similar to that at 0.70 to 1.15m Some portions are slightly indurated--CO3 cement Some CO3 coatings on quartz grains
								7	7	FPS-4	SHELLY MUDDY SAND - Gradational contact at 6.06m shell material decrease to 10-15%, mud approximately 5%, quartz sand, very fine to fine with some medium to very coarse grains (2-3%) Fossils echinoid spines, forams assemblage similar to section from 1.15m to 5.36m Color is light olive gray (5T 5/2) Mottling fairly well developed
								8	8	FPS-4	SHELLY SAND - Fairly sharp change 7.33m Robust bivalve fragments and other fossil material increases to 40-50%, calc mud 1% to 10%, very fine granule sized quartz (40 to 50%) Fossils - bivalves, barnacles, echinoid, lingula Color Light olive gray (5T 6/1) Bivalve fragments up to 4 cm, size decreases slightly downward Downward increase in quartz grain size, Quartz granules - pebbles - 10 to 12% at 8.0m
								9	9	FPS-4	FOSSILIFEROUS CALCIC FINE SAND - Sharp contact at 8.40m Yellowish gray (5T 7/2), slightly calc muddy (7%), fossiliferous (10 to 12%), well sorted, very fine to fine (< 2% medium to very coarse) quartz sand Fossils include unident. sand-gravel sized fragments > ostracodes (abundant) > echinoid spines > planktonic and benthic forams Trace 1 heavyes, phosphorite trace to 0% A few calcite/dolomite indurated pieces (up to 3.5cm) at 8.60m Very faint mottling in this section Larger shell fragments are decayed

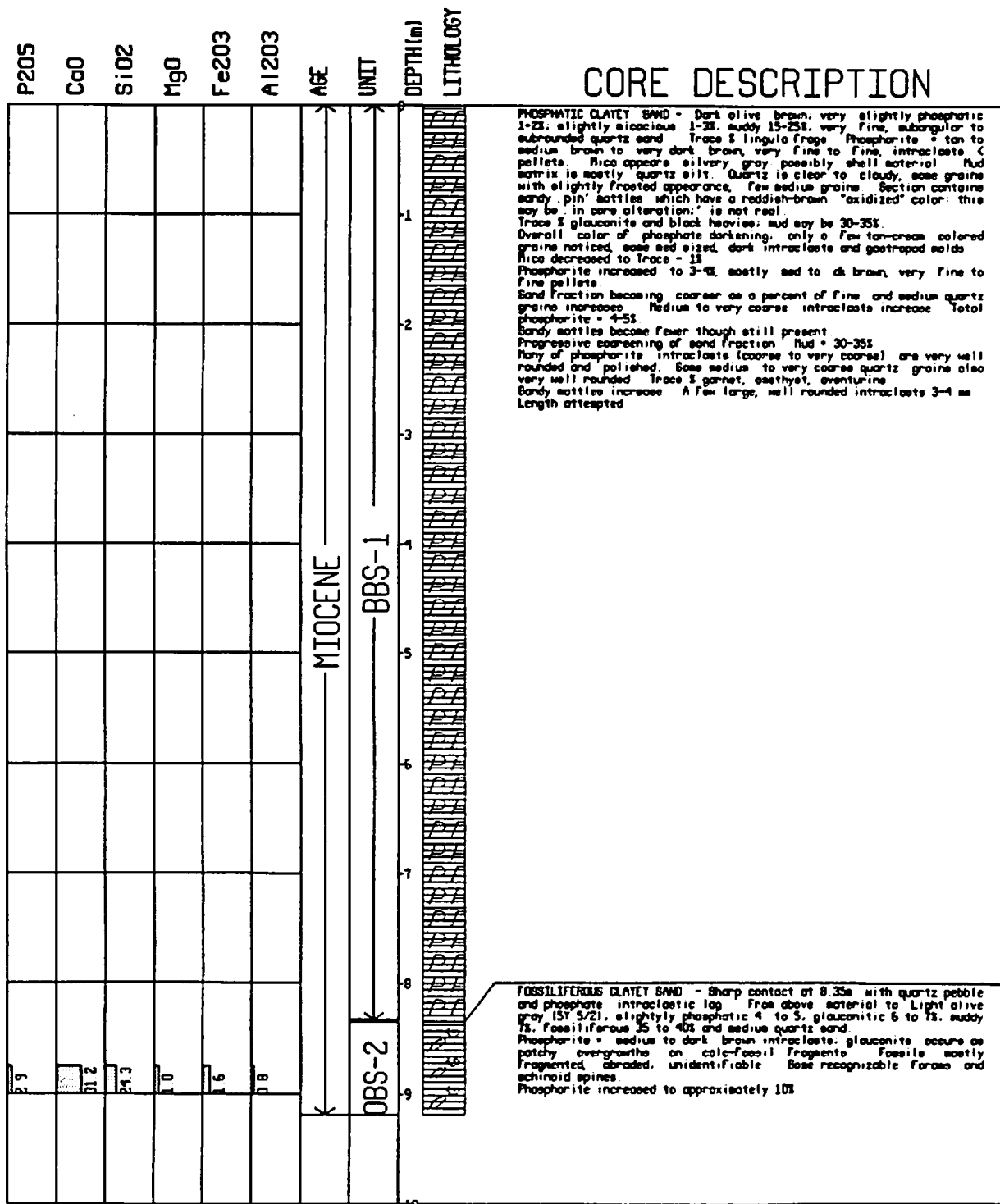
ONslow BAY CORE NUMBER: OB38

CRUISE: NSF O. BAY DATE LOGGED: 12-27-83 LATITUDE: 34.437 degrees
 LENGTH ATTEMPTED: 8.4m BY: P. MALLETT LONGITUDE: 76.000 degrees
 LENGTH OF CORE: 9.2m



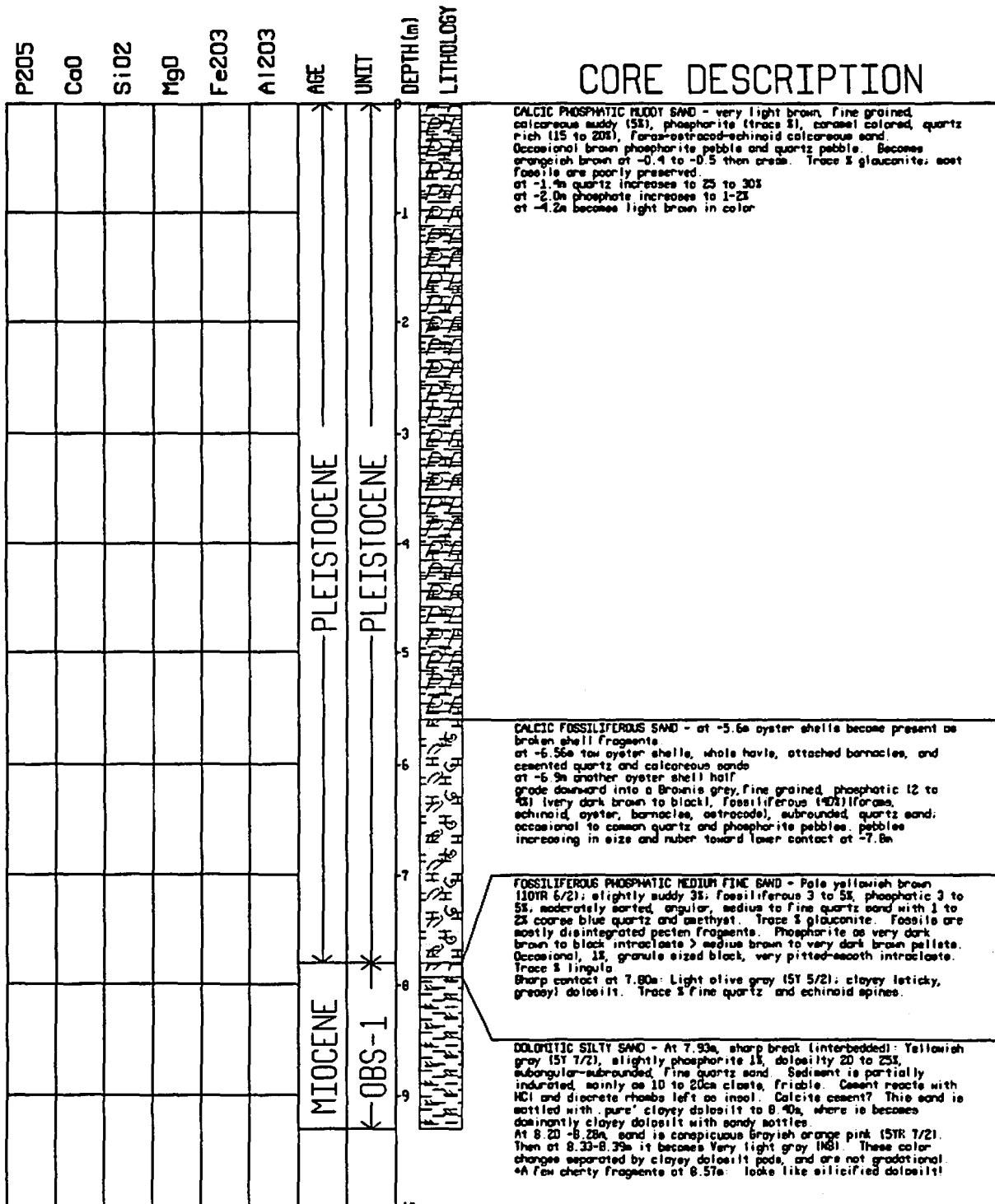
ON SLOW BAY CORE NUMBER: OB39

CRUISE: NSF O.BAY DATE LOGGED: 1-2-84 LATITUDE: 34.440 degrees
 LENGTH ATTEMPTED: 7.3m BY: P. MALLETTE LONGITUDE: 76.975 degrees
 LENGTH OF CORE: 9.19m



ON SLOW BAY CORE NUMBER: OB40

CRUISE: NSF O. BAY DATE LOGGED: 1-16-84 LATITUDE: 34.433 degrees
 LENGTH ATTEMPTED: 6.6m BY: P. MALLETTE LONGITUDE: 76.017 degrees
 LENGTH OF CORE: 9.3m



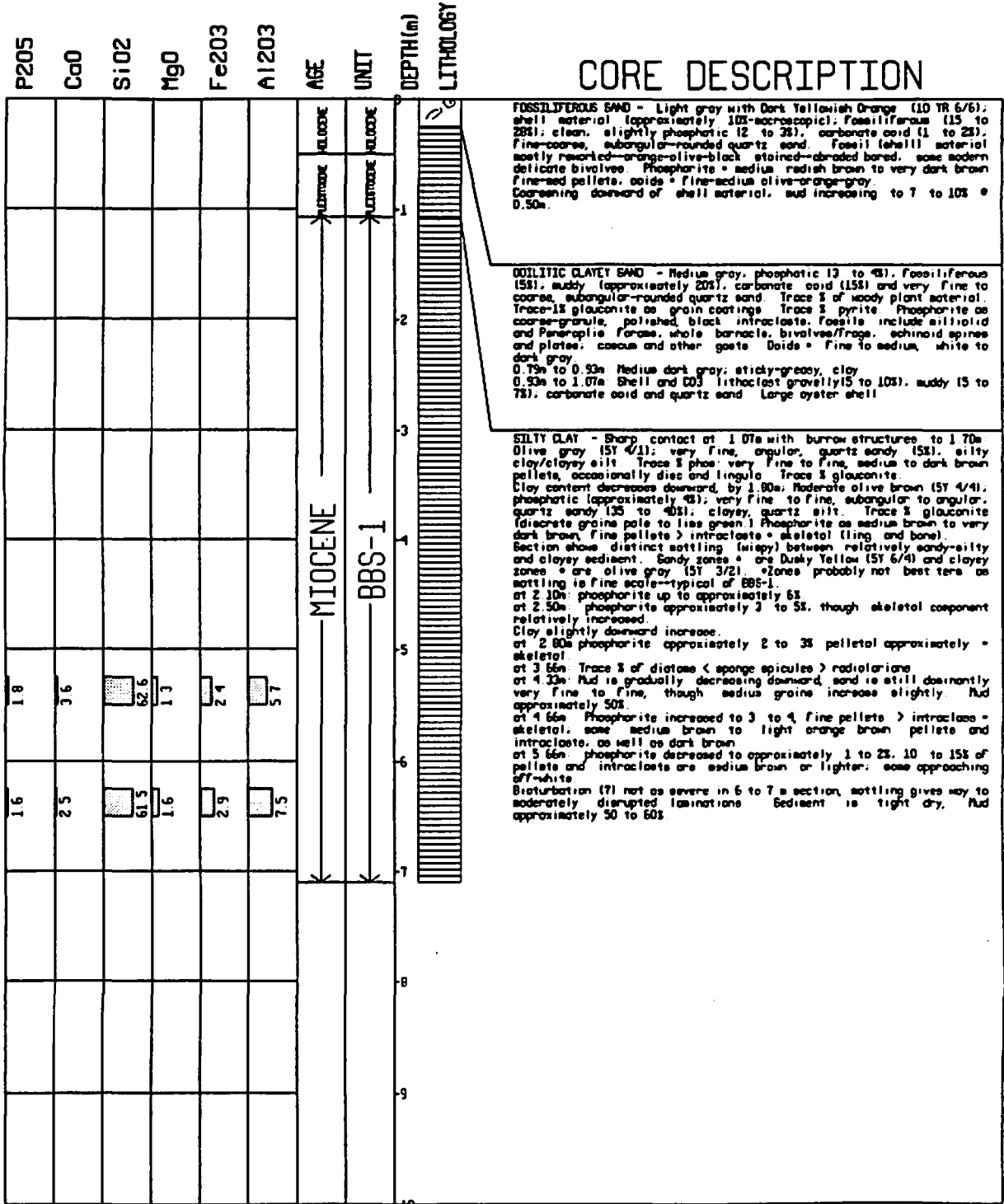
ONslow BAY CORE NUMBER: OB41

CRUISE: NSF O. BAY DATE LOGGED: 6-23-80 LATITUDE: 34.351 degrees
 LENGTH ATTEMPTED: 6.8m BY: D. LEWIS LONGITUDE: 76.997 degrees
 LENGTH OF CORE: 8.2m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	0	G	<p>SHELL SAND - Brown, clean to very slightly muddy, moderately to moderately well sorted, fine grained, phosphatic (1% very dark brown, coarse and black), shelly (trace to 2% lechnoid parts, forams and small bivalves), gray calcareous grains (trace to 1%), angular to subrounded quartz sand.</p>
						HOLOCENE	HOLOCENE	1	F		FOSSILIFEROUS SAND - Grey, poorly sorted, fossiliferous (15% bivalves, small gastropods, aulinia, pecten), phosphatic (trace to 1% black to very dark brown), calcic grains (2 to 3%), subrounded, fine to medium quartz sand.
						HOLOCENE	HOLOCENE	2	F	<p>DOLOMITIC SAND - Almost all dolomite nodules have oxidized to light brown (STR 5/6) to moderate brown (STR 4/4). Very high dolomitic (visible rhombs) Content 80-90% rhombs with cloudy cores. Moderately strong reaction to HCl. @ 2.5m 4 cm thick calcite muddy nodule, cream colored. Explosive in HCl, no rhombs seen. Interbedded sands are very clean (SS and dolomite). Salt and pepper sands of Lewis (?) "Pepper" results from 2-4% phos and coated quartz grains. Some may have been logged as Fe-stained in post. This complete to sparse coating reacts slowly with HCl and nitric and gives positive phosphate test in NH4Cl. 1-2% rotten shell material in sands, 1/2 of which is smooth ostracode valves; also barnacle, mollusks? Elphidium (rare) Calc cemented pebbles noted by Lewis are sand-strongly indurated. Cement is fibrous (bladed) microspar. Indurated at base. Regressive facies?? Cycle may be shallowing upward. Core falls in steeply dipping clinal area on seismic section. capped on-line.</p>
						HOLOCENE	HOLOCENE	3	F	
						HOLOCENE	HOLOCENE	4	F	
						HOLOCENE	HOLOCENE	5	F	
						HOLOCENE	HOLOCENE	6	F	
						HOLOCENE	HOLOCENE	7	F	
						HOLOCENE	HOLOCENE	8	F	
						HOLOCENE	HOLOCENE	9	F	
						HOLOCENE	HOLOCENE	10	F	

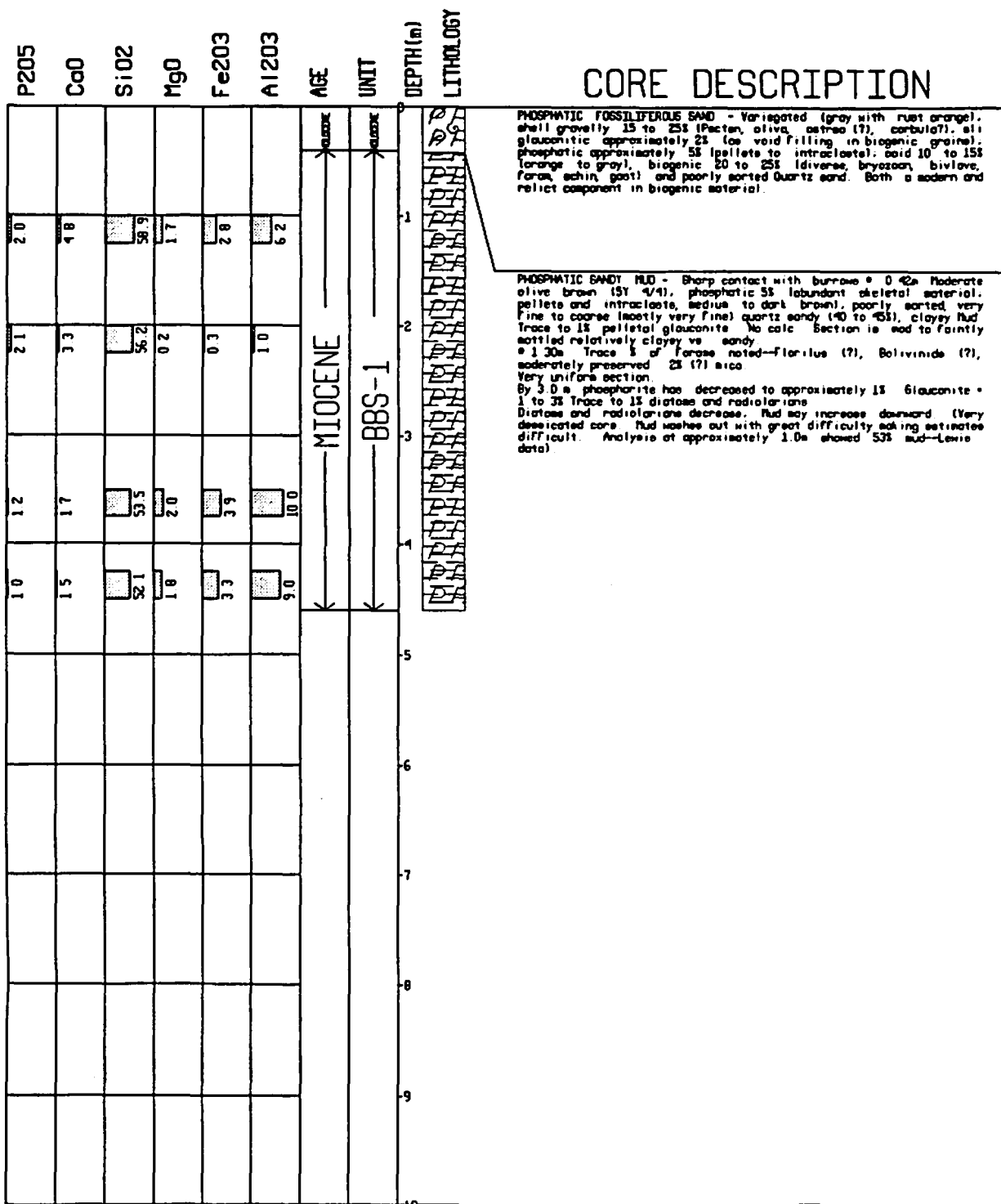
ONslow BAY CORE NUMBER: OB42

CRUISE: NSF O. BAY DATE LOGGED: 5-30-84 LATITUDE: 34.355 degrees
 LENGTH ATTEMPTED: 5m BY: P. MALLETTE LONGITUDE: 76.953 degrees
 LENGTH OF CORE: 7.1m



ONslow BAY CORE NUMBER: OB43

CRUISE: NSF 0. BAY DATE LOGGED: 6-25-80 LATITUDE: 34.352 degrees
 LENGTH ATTEMPTED: 3.2m BY: P. MALLETT LONGITUDE: 76.958 degrees
 LENGTH OF CORE: 4.6m



CORE DESCRIPTION

PHOSPHATIC FOSSILIFEROUS SAND - Variegated (gray with rust orange), shell gravelly 15 to 25% (Pecten, oliva, astrae (?), corbula?). all glauconitic approximately 2% (see void filling in biogenic grains); phosphatic approximately 5% (pellets to intraclasts); acid 10 to 15% (orange to gray), biogenic 20 to 25% (diverse, bryozoan, bivalve, forams, echin, goni) and poorly sorted quartz sand. Both a modern and relict component in biogenic material.

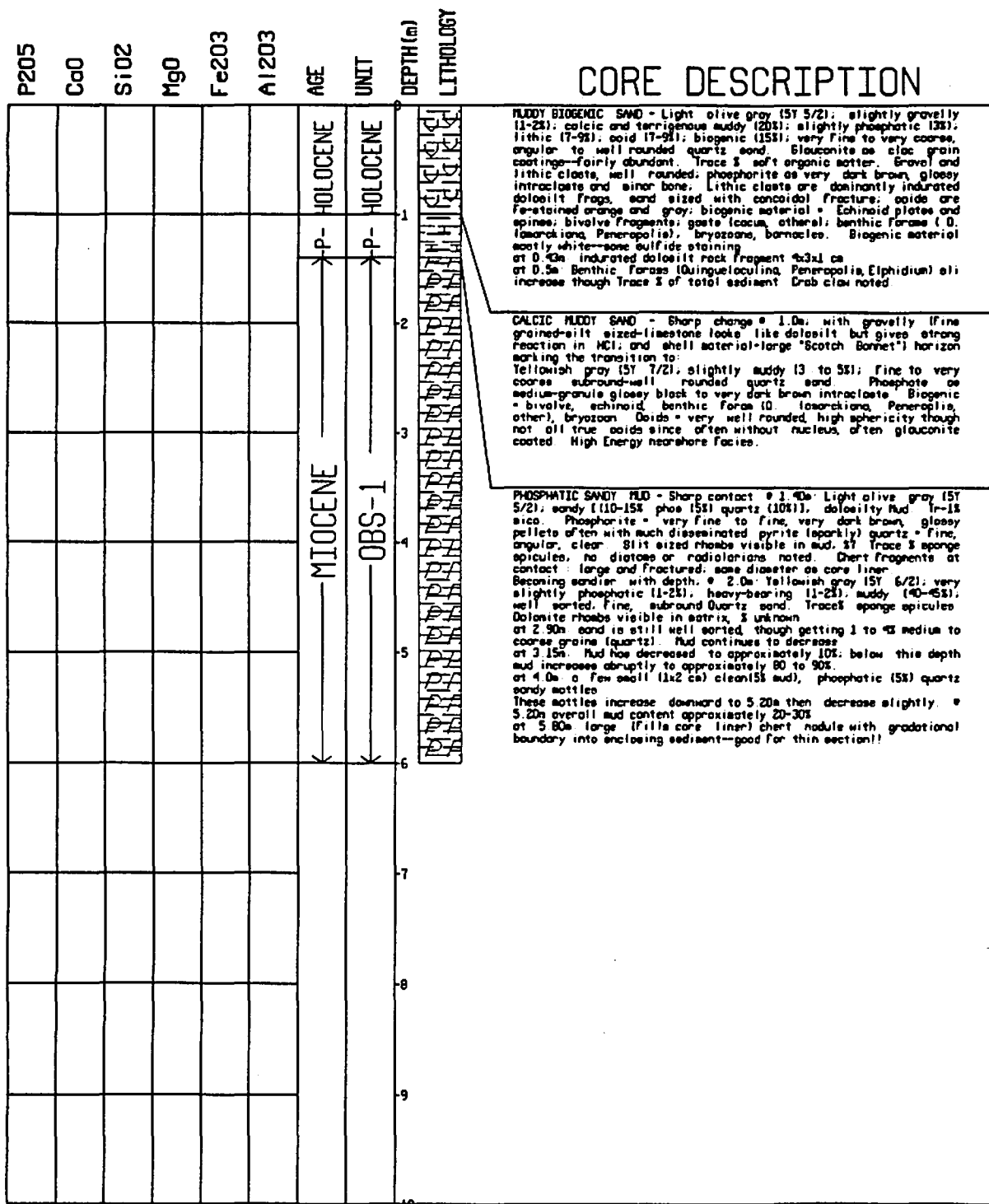
PHOSPHATIC SANDY MUD - Sharp contact with burrows @ 0.42m. Moderate olive brown (SY 4/4), phosphatic 5% abundant skeletal material, pellets and intraclasts, medium to dark brown, poorly sorted, very fine to coarse (mostly very fine) quartz sandy (40 to 45%), clayey mud. Trace to 1% pelletal glauconite. No calc. Section is said to faintly mottled relatively clayey vs sandy @ 1.30m. Trace % of forams noted—florilus (?), Bolivina (?), moderately preserved 2% (?) also.

Very uniform section.

By 3.0m phosphatic has decreased to approximately 1% glauconite - 1 to 3% trace to 1% diatoms and radiolarians. Diatoms and radiolarians decrease. Mud may increase downward (Very desiccated core. Mud washes out with great difficulty asking estimates difficult. Analysis at approximately 1.0m showed 53% mud—Lewis data).

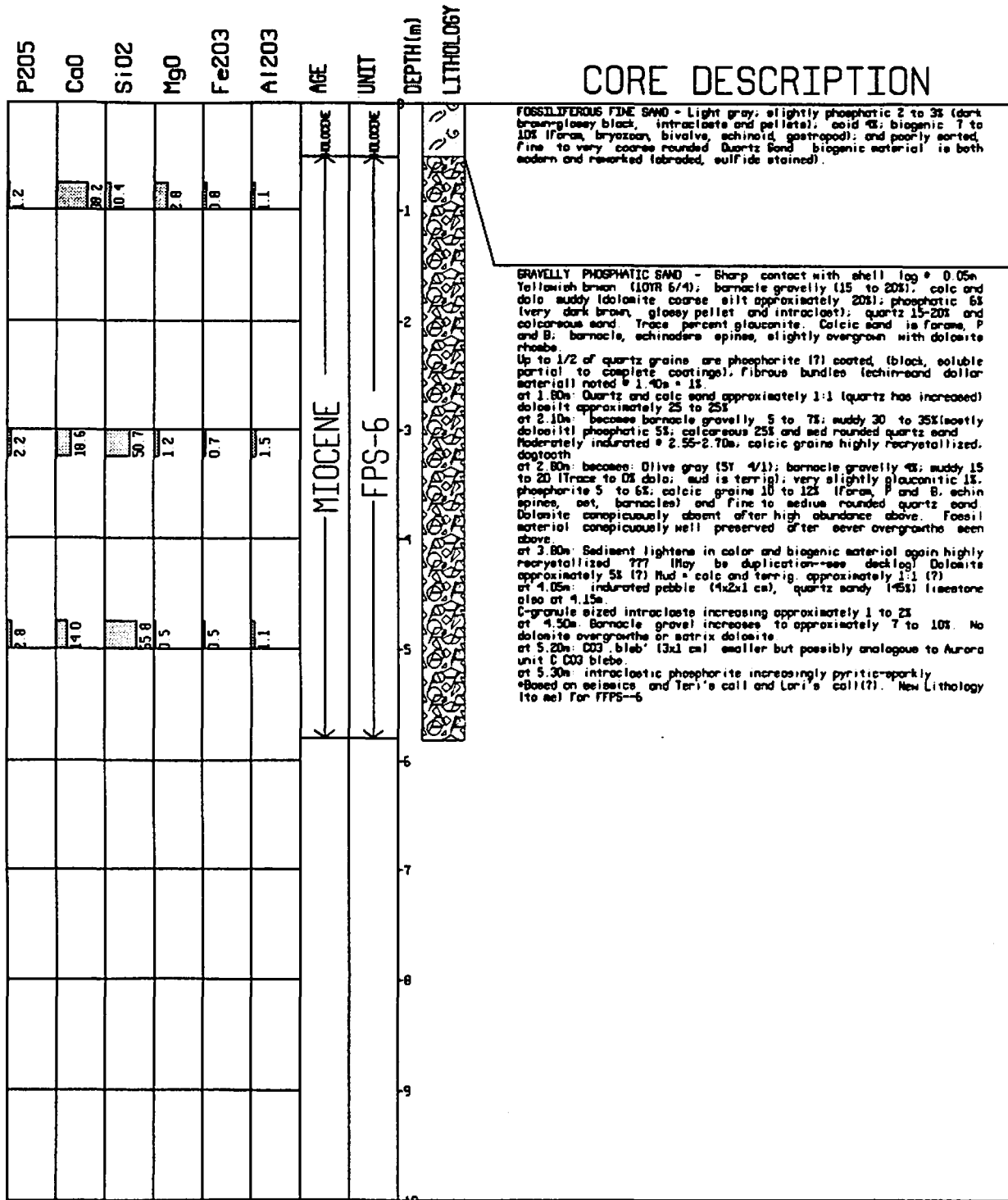
ON SLOW BAY CORE NUMBER: OB44

CRUISE: NSF O. BAY DATE LOGGED: 1-22-85 LATITUDE: 34.347 degrees
 LENGTH ATTEMPTED: 3.1m BY: P. MALLETTE LONGITUDE: 76.031 degrees
 LENGTH OF CORE: 6m



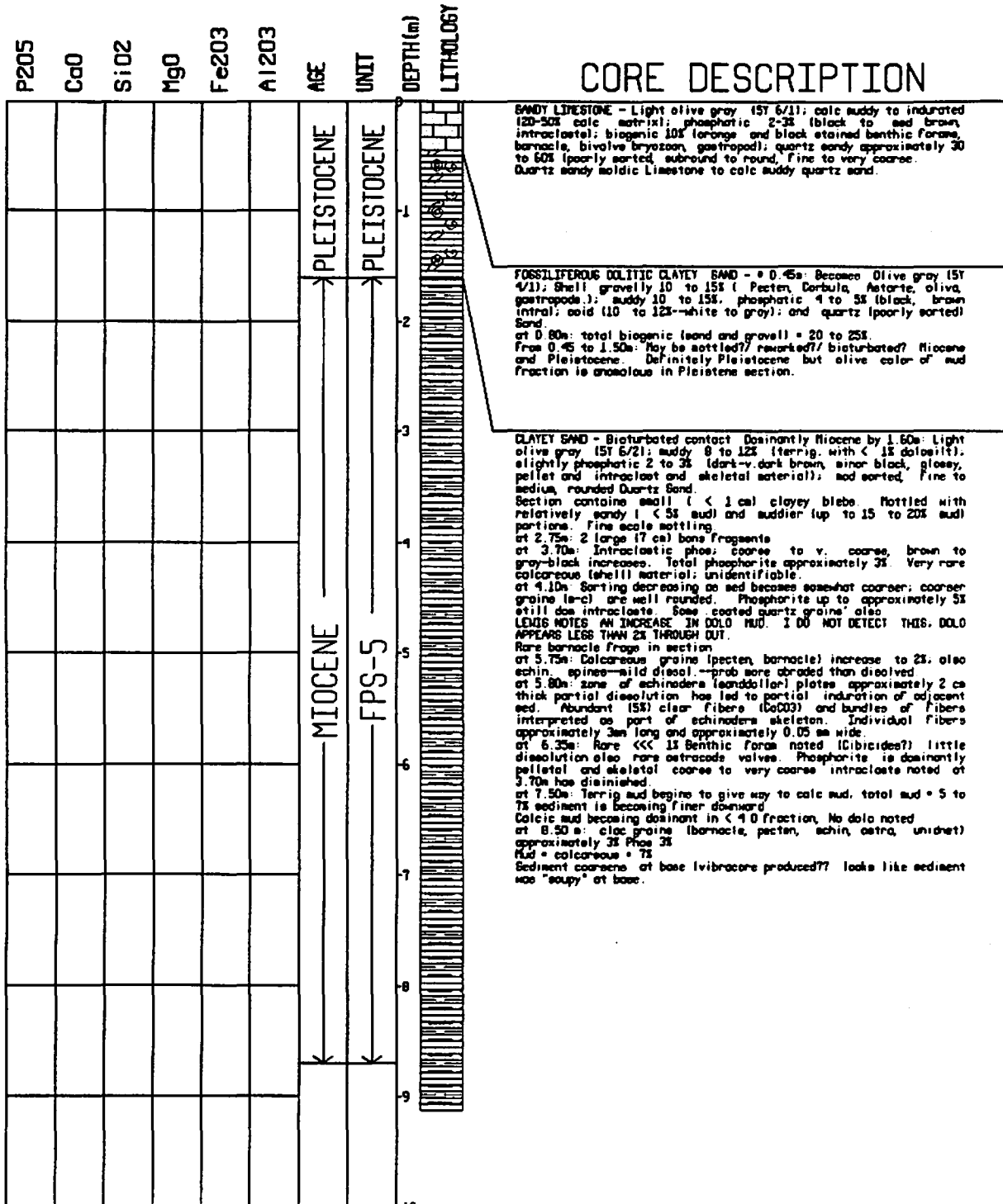
ONSLOW BAY CORE NUMBER: OB45

CRUISE: NSF O. BAY DATE LOGGED: 2-22-85 LATITUDE: 34.347 degrees
 LENGTH ATTEMPTED: 2.9m BY: P. MALLETT LONGITUDE: 76.055 degrees
 LENGTH OF CORE: 5.82m



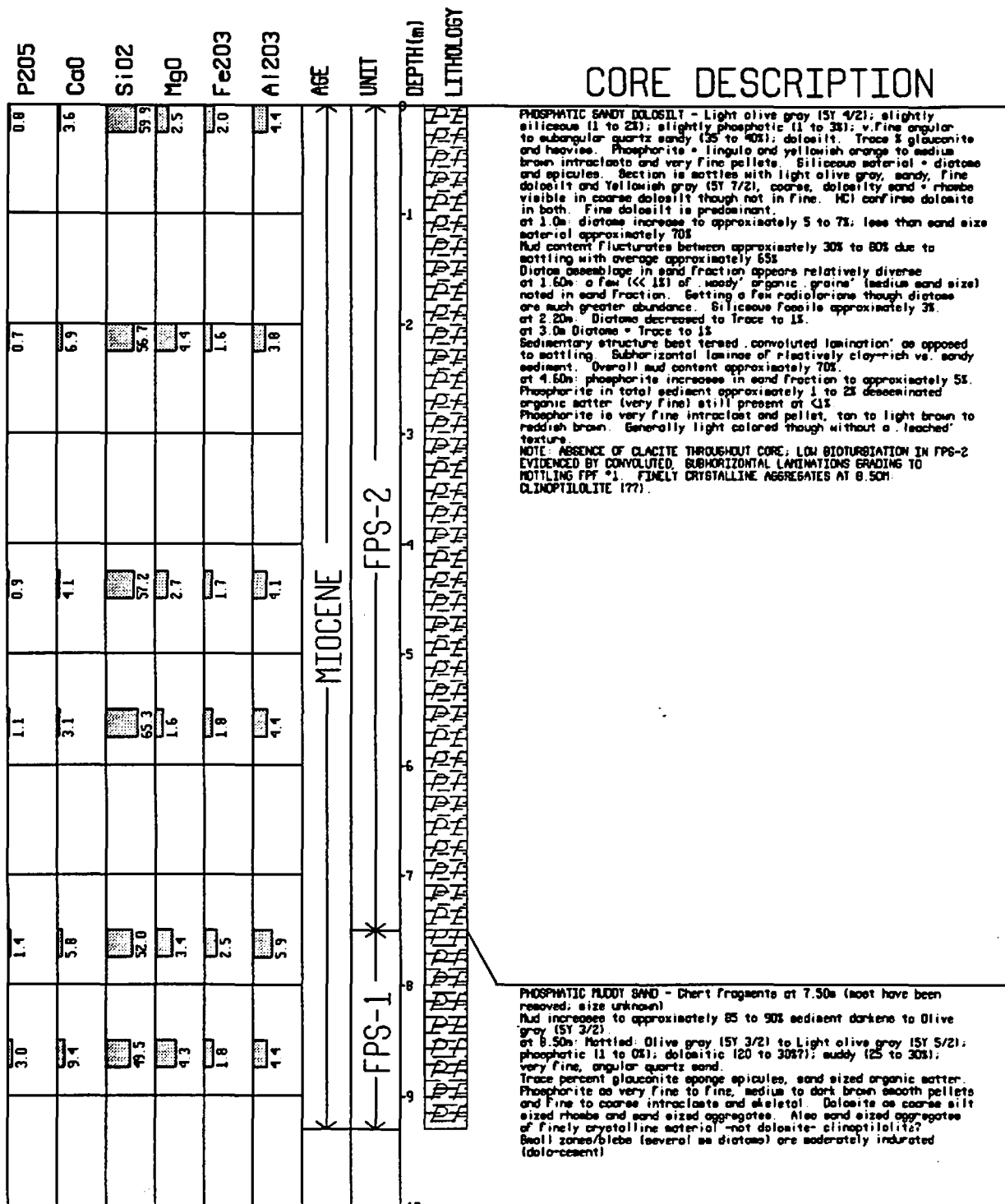
ON SLOW BAY CORE NUMBER: OB46

CRUISE: NSF O. BAY DATE LOGGED: 2-18-85 LATITUDE: 34.340 degrees
 LENGTH ATTEMPTED: 6.3m BY: P. MALLETTE LONGITUDE: 77.082 degrees
 LENGTH OF CORE: 9.13m



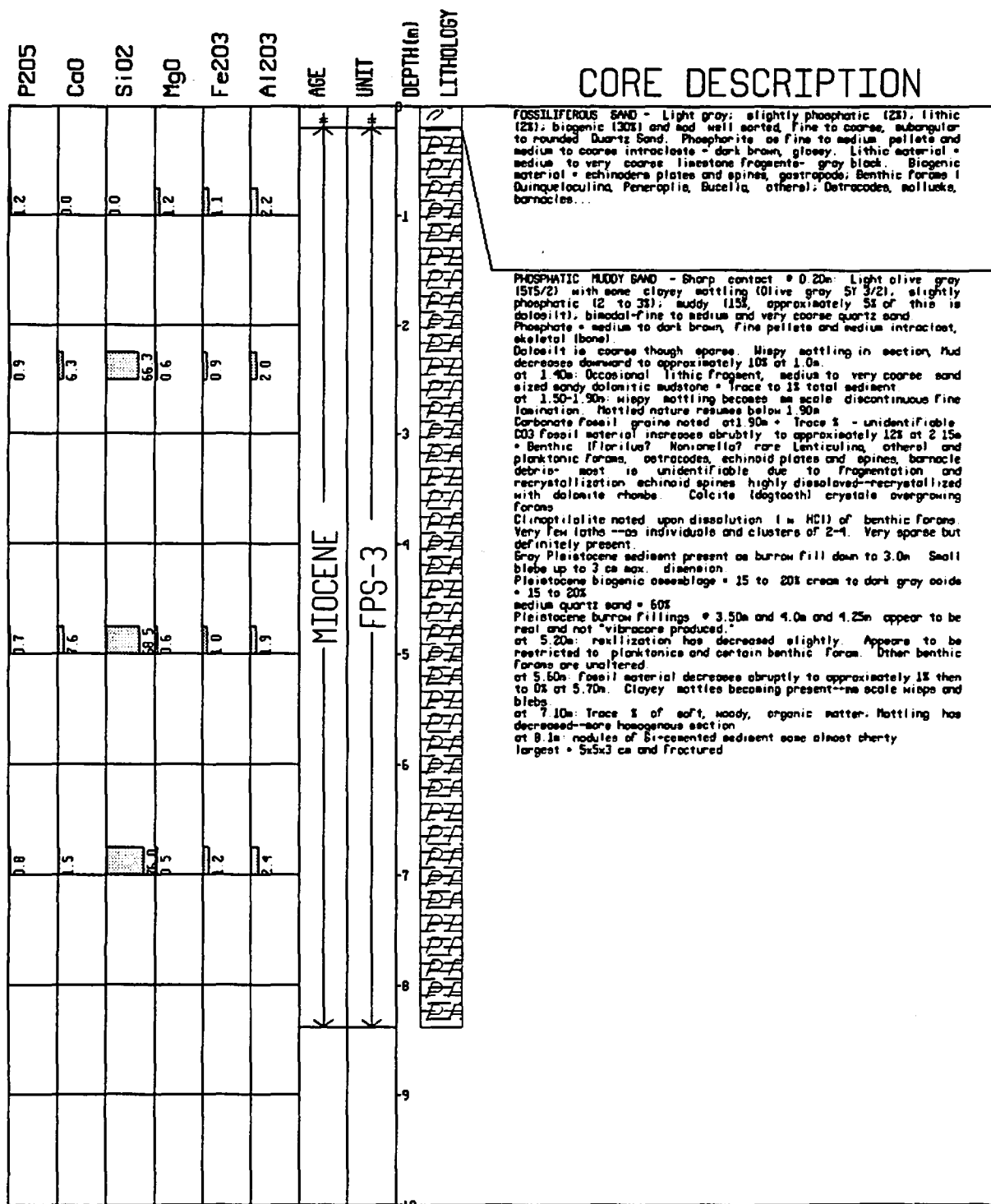
ONslow BAY CORE NUMBER: OB47

CRUISE: NSF O. BAY DATE LOGGED: 11-19-84 LATITUDE: 34.075 degrees
 LENGTH ATTEMPTED: 6.1m BY: P. MALLETT LONGITUDE: 77.295 degrees
 LENGTH OF CORE: 9.3m



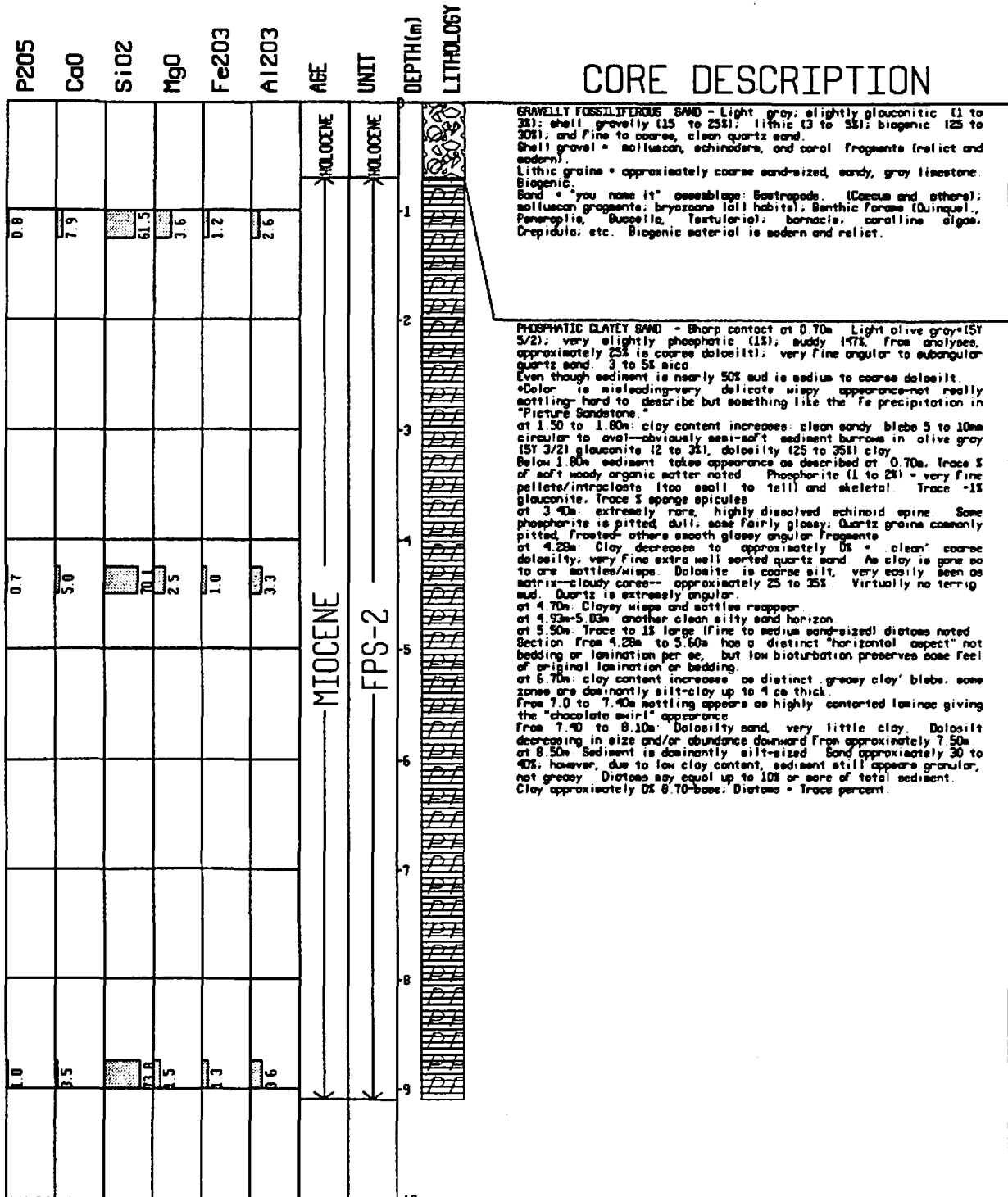
ON SLOW BAY CORE NUMBER: OB48

CRUISE: NSF O. BAY DATE LOGGED: 2-4-85 LATITUDE: 34.157 degrees
 LENGTH ATTEMPTED: 6m BY: P. MALLETT LONGITUDE: 76.217 degrees
 LENGTH OF CORE: 8.38m



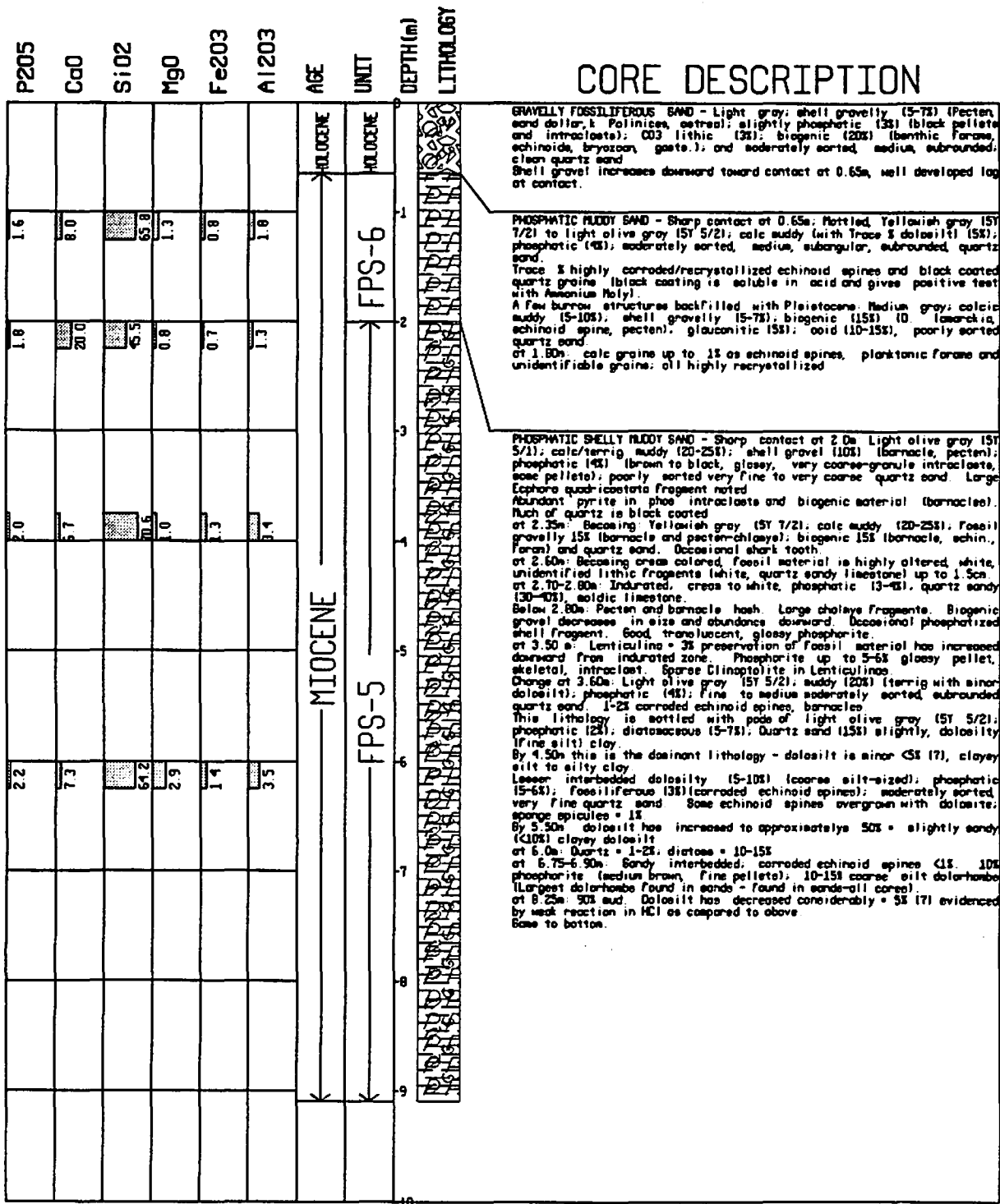
ONSLOW BAY CORE NUMBER: OB49

CRUISE: NSF O.BAY DATE LOGGED: 1-24-85 LATITUDE: 34.162 degrees
 LENGTH ATTEMPTED: 6.6m BY: P. MALLETTE LONGITUDE: 76.258 degrees
 LENGTH OF CORE: 9.1m



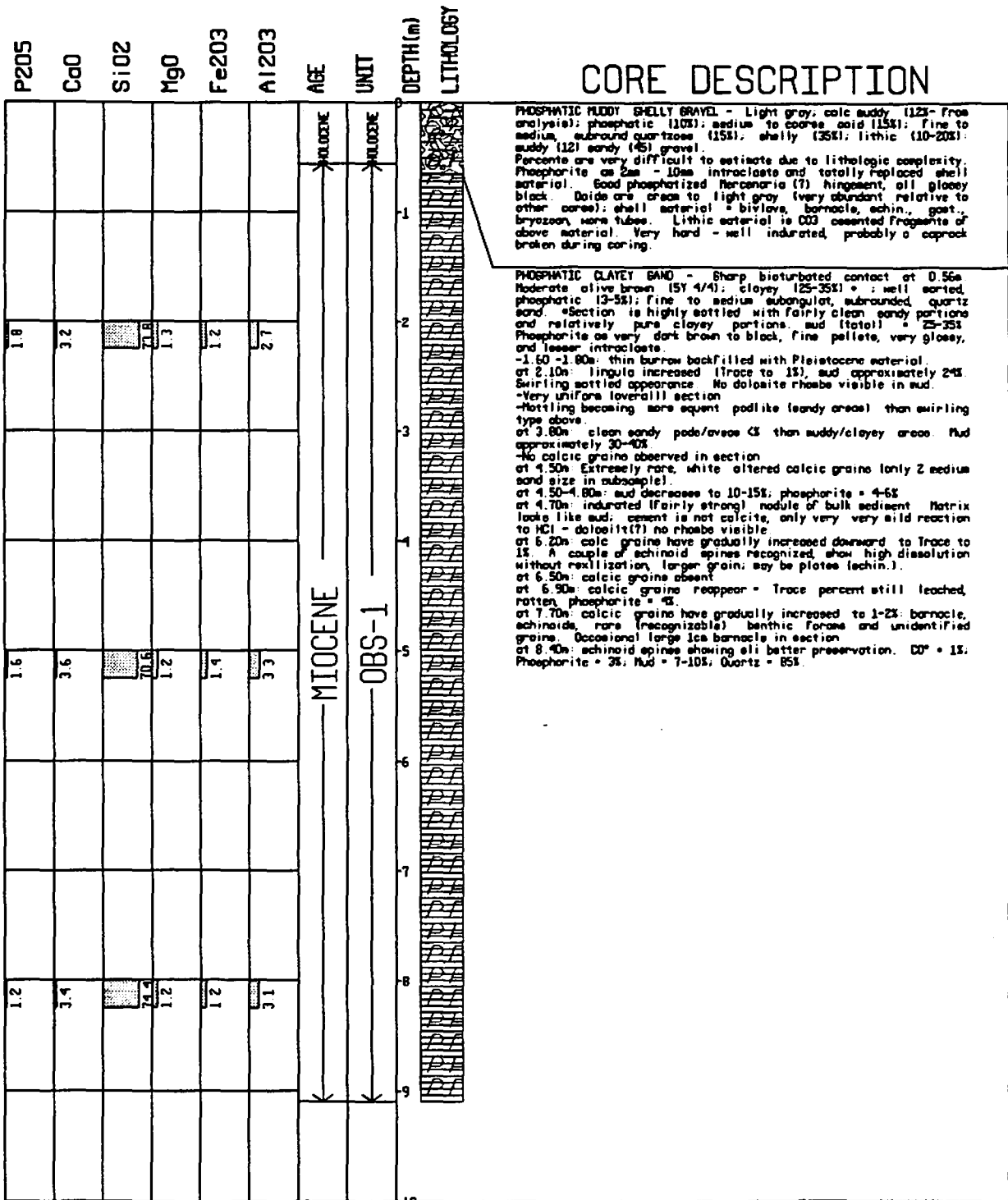
ONslow BAY CORE NUMBER: OB50

CRUISE: NSF O. BAY DATE LOGGED: 2-13-85 LATITUDE: 34.158 degrees
 LENGTH ATTEMPTED: 6.25m BY: P. MALLETTE LONGITUDE: 77.142 degrees
 LENGTH OF CORE: 9.1m



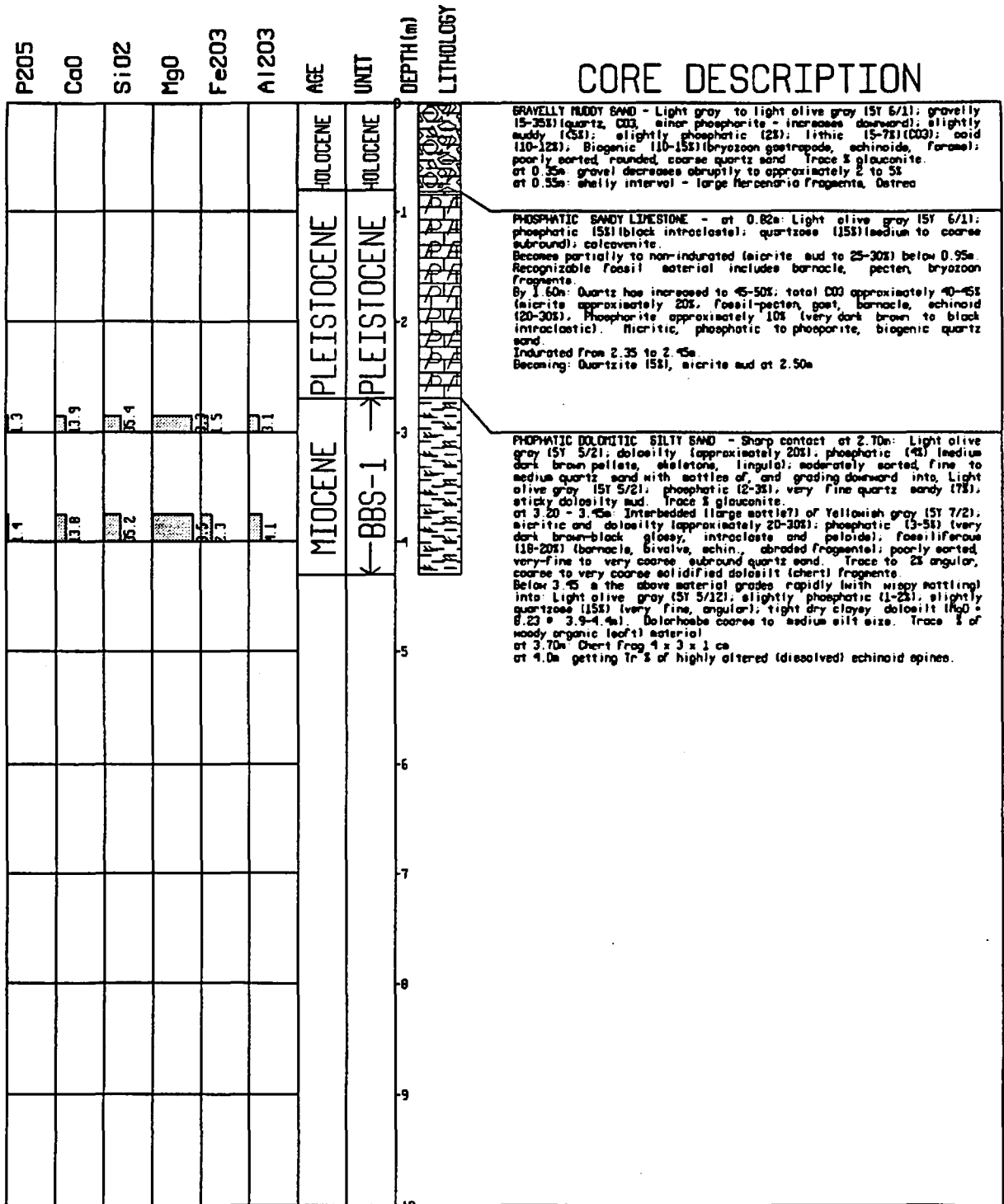
ONslow BAY CORE NUMBER: OB51

CRUISE: NSF O. BAY DATE LOGGED: 1-11-85 LATITUDE: 34.153 degrees
 LENGTH ATTEMPTED: 7.5m BY: P. MALLETTE LONGITUDE: 77.055 degrees
 LENGTH OF CORE: 9.1m



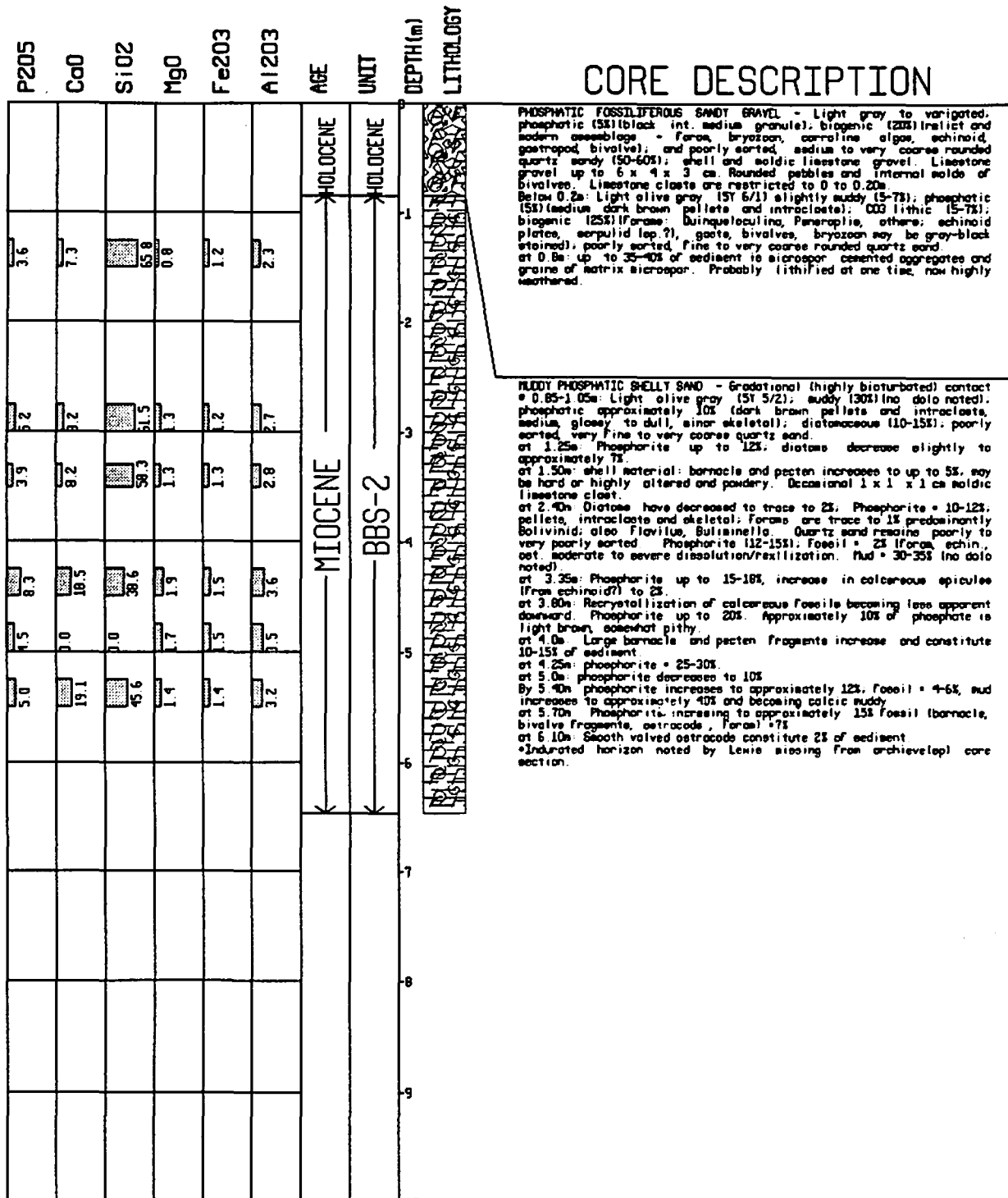
ONSLow BAY CORE NUMBER: OB52

CRUISE: NSF O. BAY DATE LOGGED: 3-8-85 LATITUDE: 34.158 degrees
 LENGTH ATTEMPTED: 3.44m BY: P. MALLETTE LONGITUDE: 76.975 degrees
 LENGTH OF CORE: 4.3m



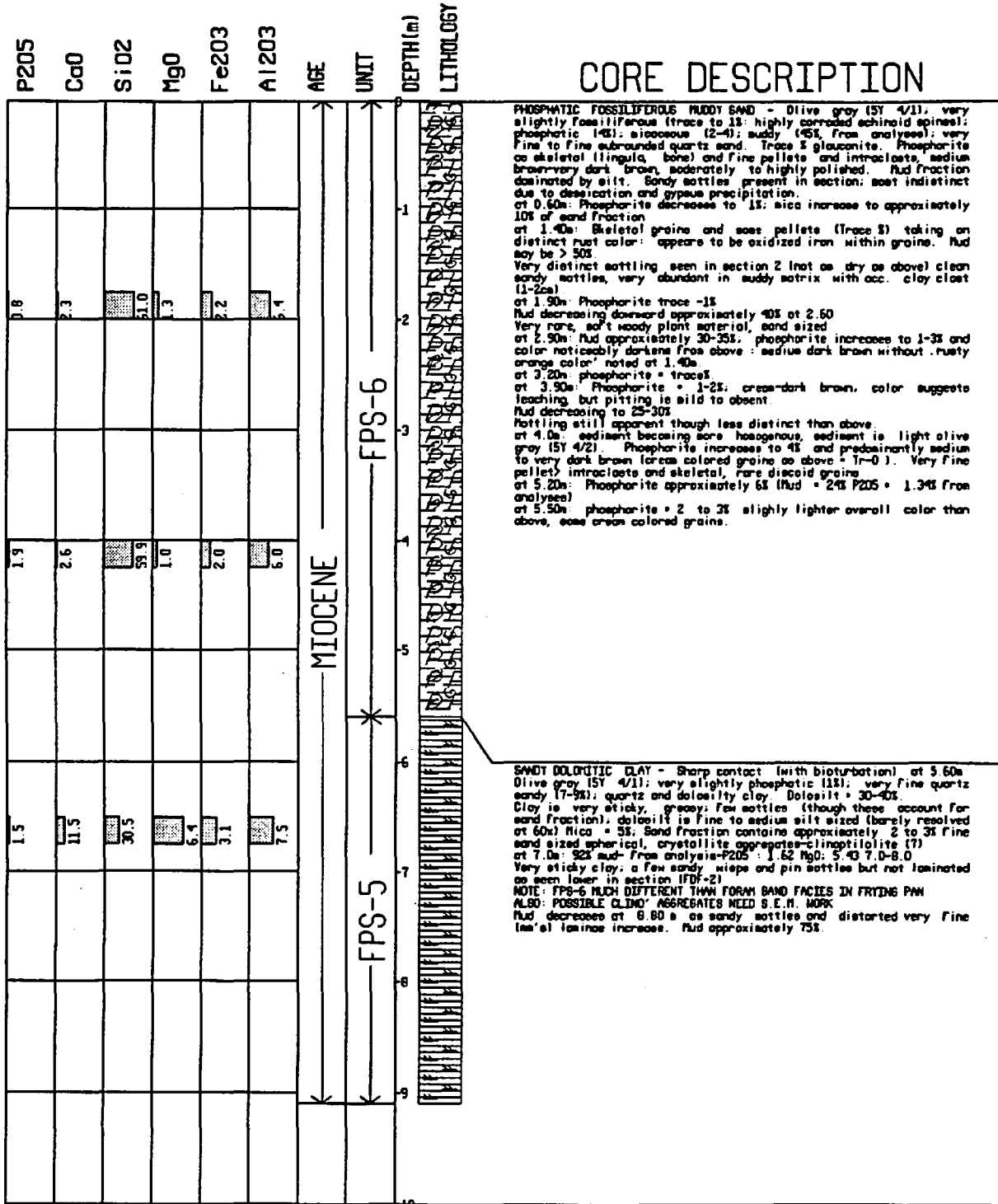
ONslow BAY CORE NUMBER: OB53

CRUISE: NSF 0. BAY DATE LOGGED: 3-9-85 LATITUDE: 34.016 degrees
 LENGTH ATTEMPTED: 3.5m BY: P. MALLETT LONGITUDE: 76.915 degrees
 LENGTH OF CORE: 6.47m



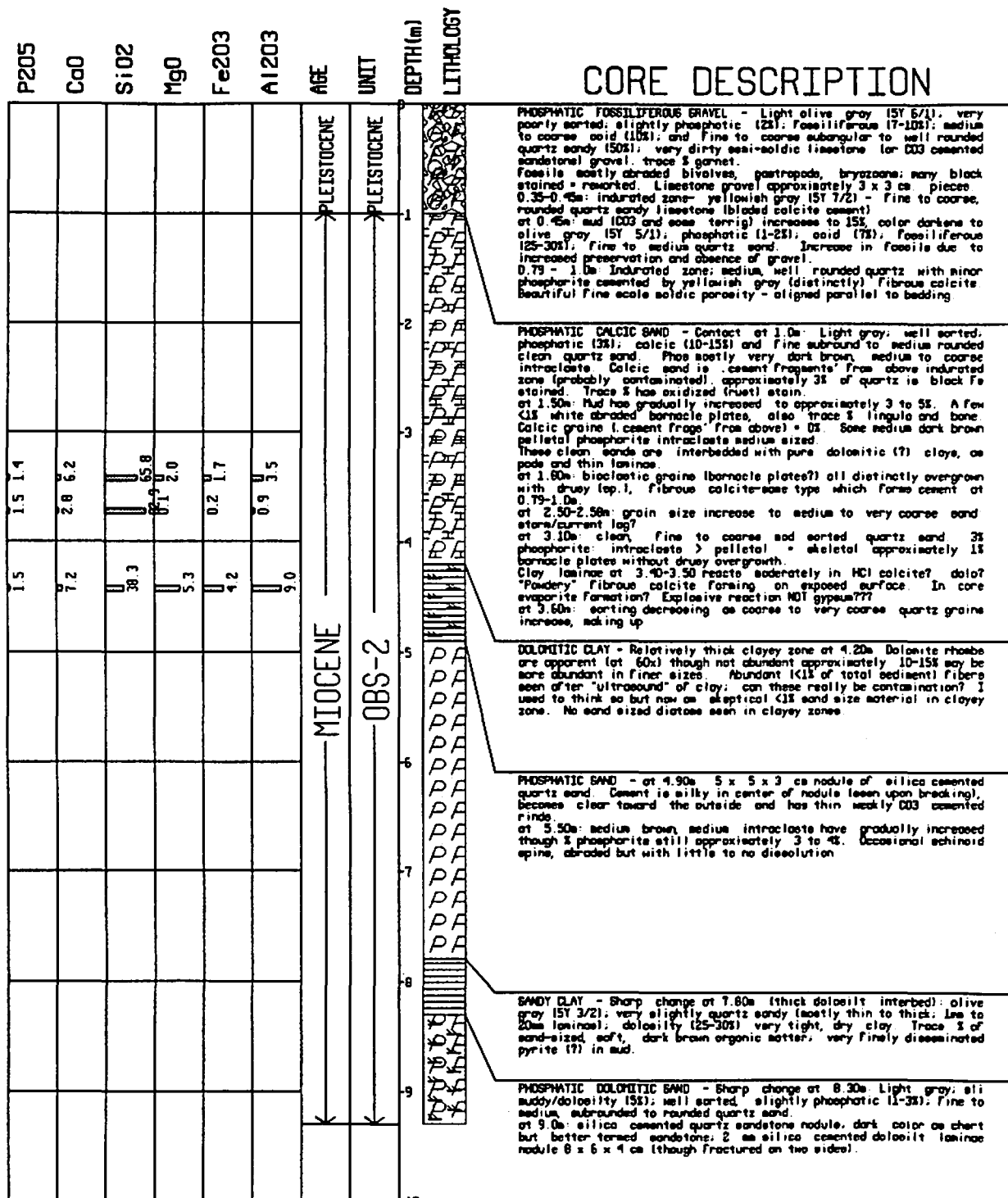
ONSLow BAY CORE NUMBER: OB57

CRUISE: NSF O. BAY DATE LOGGED: 12-11-84 LATITUDE: 34.000 degrees
 LENGTH ATTEMPTED: 6.7m BY: P. MALLETTE LONGITUDE: 77.072 degrees
 LENGTH OF CORE: 9.1m



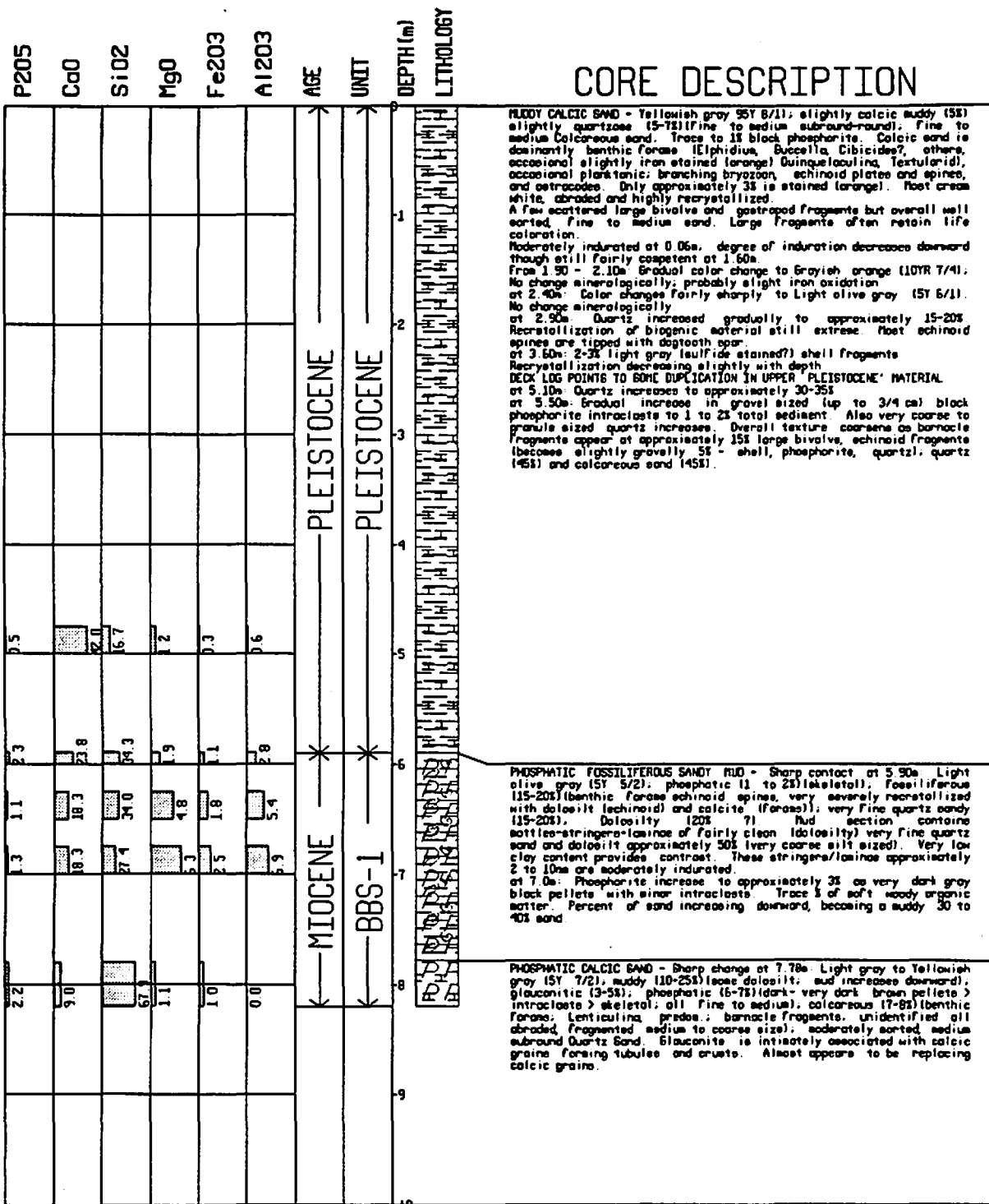
ONSLow BAY CORE NUMBER: OB58

CRUISE: NSF 0. BAY DATE LOGGED: 12-31-84 LATITUDE: 34.000 degrees
 LENGTH ATTEMPTED: 5.9m BY: P. MALLETTE LONGITUDE: 76.123 degrees
 LENGTH OF CORE: 9.3m



ON SLOW BAY CORE NUMBER: OB59

CRUISE: NSF 0. BAY DATE LOGGED: 3-12-85 LATITUDE: 34.163 degrees
 LENGTH ATTEMPTED: 7m BY: P. MALLETTE LONGITUDE: 76.857 degrees
 LENGTH OF CORE: 8.2m



ON SLOW BAY CORE NUMBER: OB61

CRUISE: NSF O. BAY DATE LOGGED: 8-16-83 LATITUDE: 33.909 degrees
 LENGTH ATTEMPTED: 8.6m BY: P. MALLETTE LONGITUDE: 77.563 degrees
 LENGTH OF CORE: 6.13m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY
						HOLOCENE	HOLOCENE	0	0
						HOLOCENE	HOLOCENE	1	1
						HOLOCENE	HOLOCENE	2	2
						HOLOCENE	HOLOCENE	3	3
						HOLOCENE	HOLOCENE	4	4
						HOLOCENE	HOLOCENE	5	5
						HOLOCENE	HOLOCENE	6	6
						HOLOCENE	HOLOCENE	7	7
						HOLOCENE	HOLOCENE	8	8
						HOLOCENE	HOLOCENE	9	9
						HOLOCENE	HOLOCENE	10	10

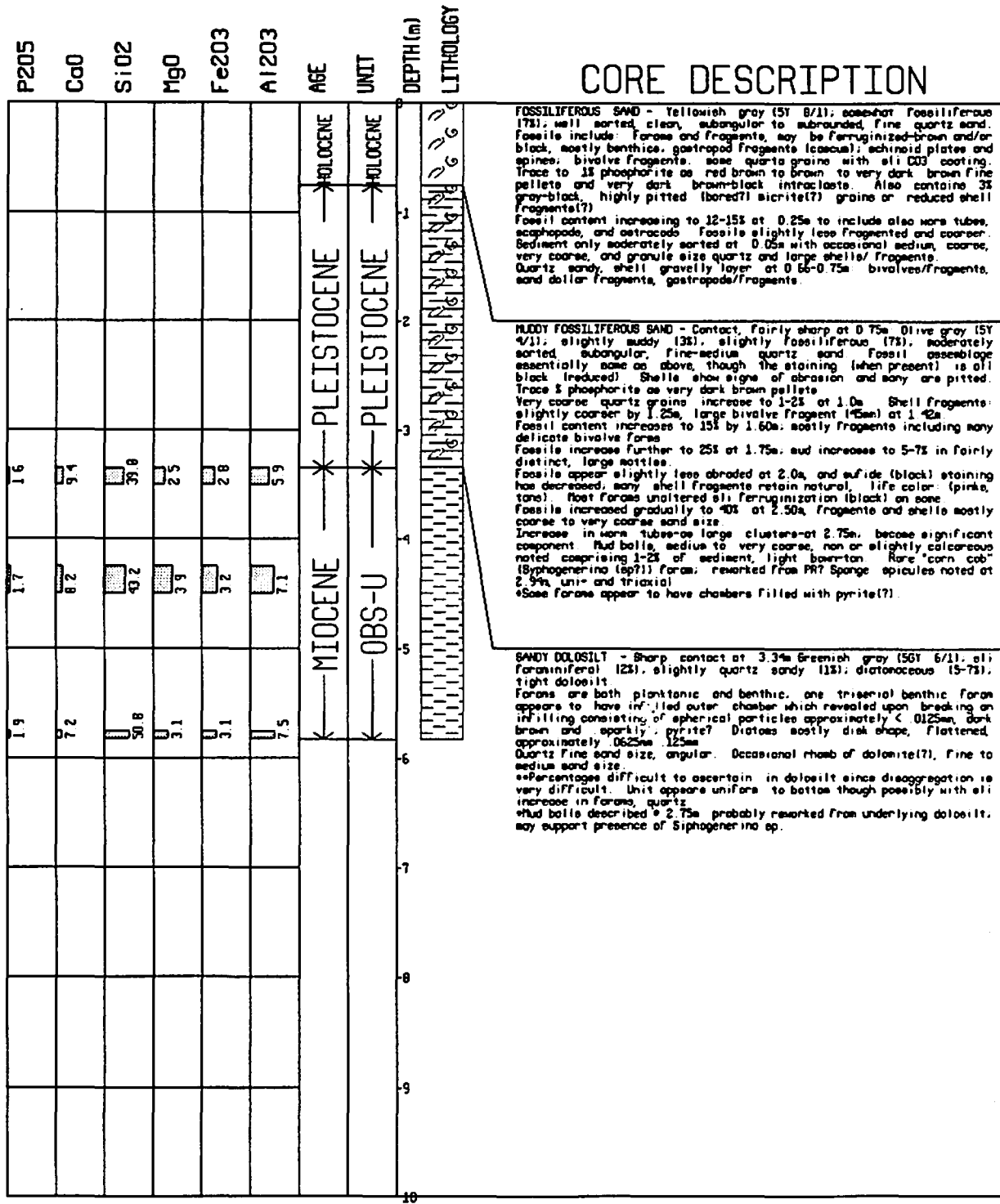
CORE DESCRIPTION

FOSILIFEROUS SAND - Light gray; phosphatic (33); Fossiliferous (123); clean, poorly sorted, subround-rounded, fine to very coarse quartz sand. Phos as brown-very dark brown-black polished fine pellets and very dark brown-black sadius to very coarse intraclasts. Fossils include: bivalves, gastropods, forams, echinoid plates and spines. Shells may be intact or abraded; slight ferruginization of some forams, bivalve fragments may be sulfide stained (and abraded); but mostly white, unstained. Worm tubes, scaphopods, and occasional planktonic forams present with above assemblage at 0.05m. Becoming well sorted by 0.75m as very coarse-grained size quartz grains decrease; increase in amount of black, sulfide staining of shell fragments as stained versus unstained.

MUDDY SAND - Contact at 1.0m: light olive gray (5Y 5/2); foram-rich (203); somewhat muddy (73); very well sorted; sub-angular, very fine quartz sand. Tr 1 glauconite, Tr 3 silt, Tr 5 phos as dark brown intraclasts and pellets. Forams are dominantly planktonic, poor to moderately preserved silt to badly relictized; echinoid spines Tr-13. Contact is burrowed (?) with clasts floating in above sediment. Forams decrease to 10% by 1.45m; phos increased silt though still Tr 5 and includes some orange-brown intraclasts, lingula fragments. Planktonic; benthic approximately 1:1 at 1.75m. CO3 grain, tan, sadius sand size; noted and exfoliates similar to pho. pellets when leached in HCl; contains some pyrite as insole. Forams begin increasing at 3.0m and reach 15-20% by 3.25m. P:B approximately 5-7:1; preservation is good-poor, some relictization; echinoid spines increase to 13. Forams decrease from 3.25m downward to 12% at 3.38m. P:B

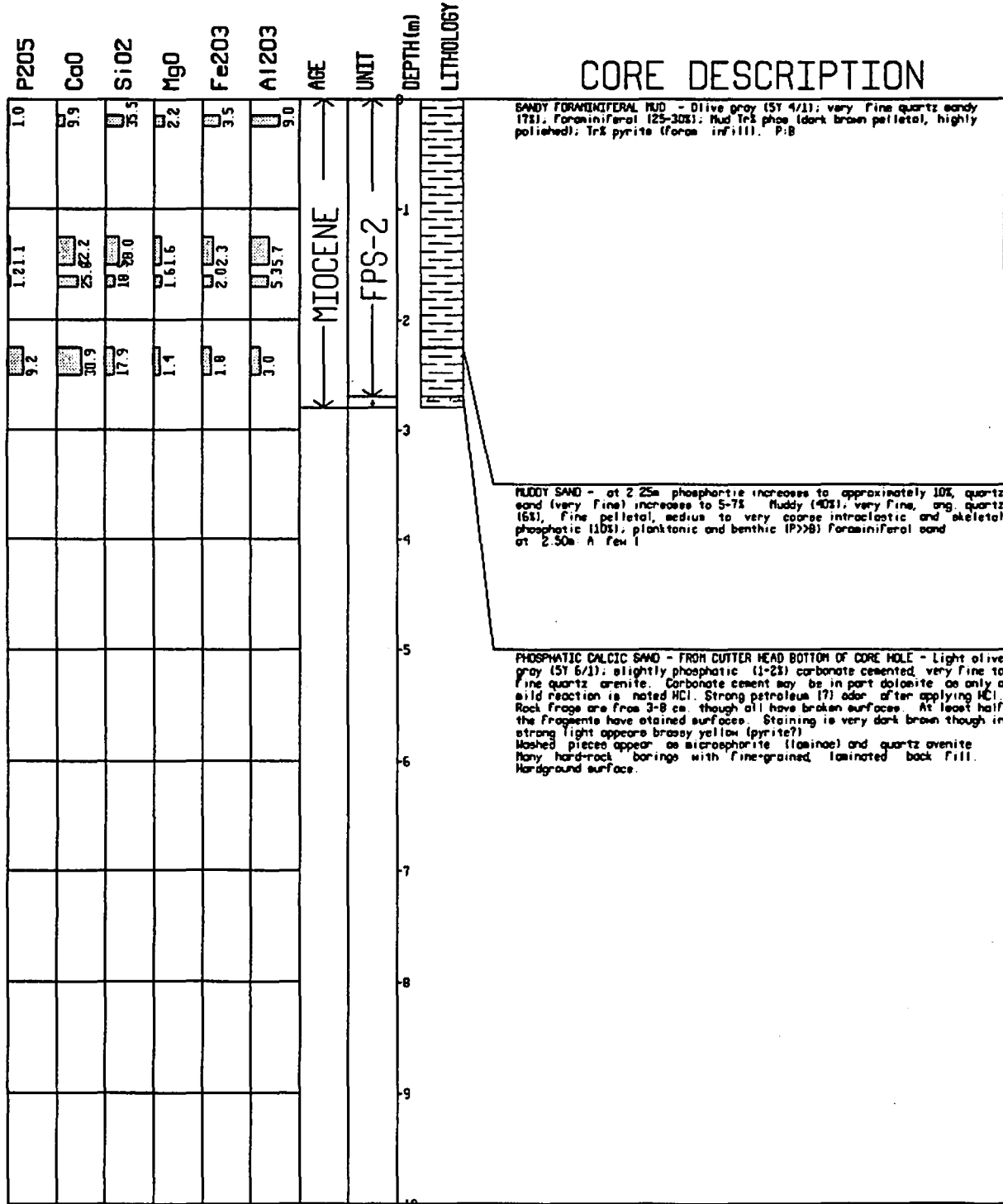
ONslow BAY CORE NUMBER: OB62

CRUISE: NSF 0. BAY DATE LOGGED: 5-8-84 LATITUDE: 33.702 degrees
 LENGTH ATTEMPTED: 5.7m BY: P. MALLETTE LONGITUDE: 77.533 degrees
 LENGTH OF CORE: 5.83m



ONSLow BAY CORE NUMBER: 0B63

CRUISE: NSF O. BAY DATE LOGGED: 5-8-84 LATITUDE: 33.763 degrees
 LENGTH ATTEMPTED: 2.14m BY: P. MALLETTE LONGITUDE: 77.582 degrees
 LENGTH OF CORE: 2.7m



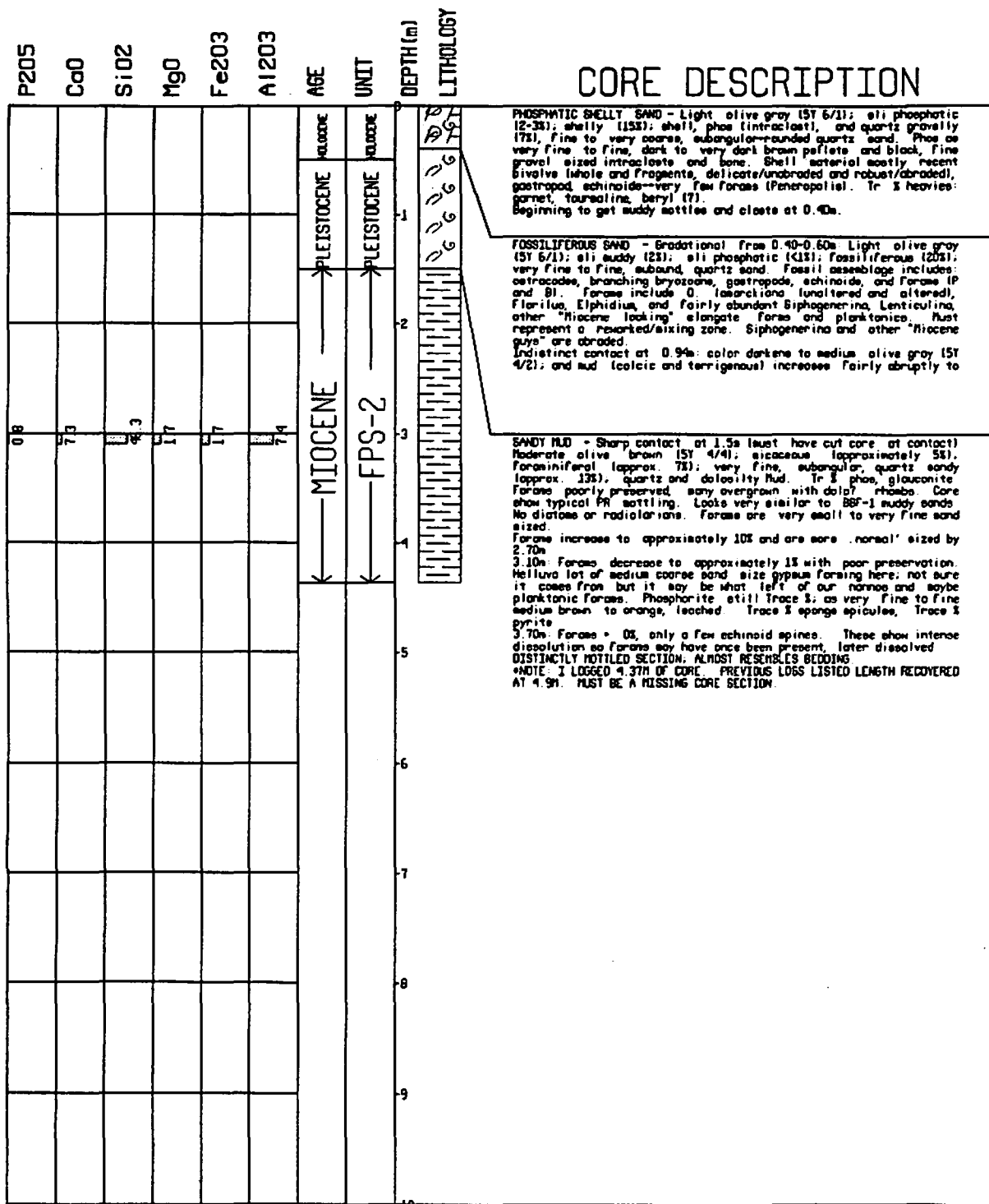
ON SLOW BAY CORE NUMBER: OB64

CRUISE: NSF 0. BAY DATE LOGGED: 7-18-84 LATITUDE: 33.803 degrees
 LENGTH ATTEMPTED: 5.7m BY: P. MALLETTE LONGITUDE: 77.618 degrees
 LENGTH OF CORE: 6.4m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
4.1	27.5	0.0	1.0	1.2	0.5	HOLOCENE	HOLOCENE	1	[Lithology symbols]	<p>CALCAREOUS SAND - Yellowish gray (5Y 7/2), weakly indurated (CO3 cement); very fine to fine angular quartz (45%) and very fine to fine calcareous (50%); silty (5%) sand. Occurs as blocks in the top of core (up to 4x4 cm). Have distinct Fe-stained surface and a few minor horizons within. Phosphorite 3-8, dark brown to yellow-orange, mildly polished-pitted pellets. Calc sand is mostly unrecognizable biogenic fragments. Forams and echinoid spines show moderate dissolution.</p>
						PLEISTOCENE	PLEISTOCENE	2	[Lithology symbols]	<p>PHOSPHATIC CALCIC SAND - Pale yellowish brown (10 YR 6/2); phosphatic 7-10%, slightly shell gravelly 2%; slightly calcic silty 2%; very fine to very coarse, abraded calcareous (35%) and fine to coarse, subangular rounded quartz (55%) sand. Phosphorite mostly fine to medium pellets, orange brown translucent to medium dark brown, mildly translucent, mild leaching of lighter grains. Biogenic calc material dominantly bivalve fragments, minor forams (<i>Duquenoisoculina</i> sp.) and barnacle plates. Some material as above becoming slightly indurated CO3 cement by 0.50m, progressively more so with depth. Phosphorite up to 12%. Sediment still very much grain supported approximately 20% is glossy black (dated < 150,000 yrs in other samples).</p>
						*PLEISTOCENE	*PLEISTOCENE	3	[Lithology symbols]	<p>PHOSPHATIC SANDY LIMESTONE - Grayish orange (10 YR 7/4), CO3 cemented, phosphatic 5%, fine, subangular to rounded, quartz sandy (20%), barnacle hash and ostra (minor) birudite. Phosphorite as fine pellets, medium to dark brown glossy (little pitting). Fairly intense recrystallization of biogenic material (except barnacles). Barnacles are pinkish in color---this may lend credence to Pleistocene age. Becoming very light gray by 1.25m, phosphorite also darkens - very dark brown to black. Becoming sandier at 1.65m-1.90m, sand gravel approximately 65/35. Sand 65/35 to 50/50, conspicuous intervals. *Noted a few <i>Siphonogenerina</i> at 2.60m in calcic sandy interval and at 2.80. Phosphorite is all very dark brown-black, pitted.</p>
12.5	26.9	23.9	1.6	1.2	2.6	MIOCENE	FPS-1	4	[Lithology symbols]	
15.1	31.2	15.3	1.4	1.0	2.2	MIOCENE	FPS-1	5	[Lithology symbols]	<p>PHOSPHATIC MUDDY SAND - Contact approximately 3.30m, burrowed with mixed lithology from 3.20-3.70 meters. Olive gray (5Y 4/1) with clay. Olive black (5Y 2/1) silt/clay/forams (15%) and very fine, very angular-angular quartz (20%) sandy, phosphorite (35%), muddy sand. Forams show extreme dissolution and recrystallization. Some (<i>Lenticulina</i>) may be whole, including <i>Siphonogenerina</i>, <i>Lenticulina</i> and other elongate forams. Phos almost all pellets, very dark brown, highly polished, some skeletal. Dark silt/clay (few) of organic rich mud. Phosphorite increasing downward approximately 45% at 3.90m, forams show much better preservation with depth--forams/calc sand = 15%, very fine quartz = 10%. Planktonic forams fairly common. 4.60m Phosphorite increases to approximately 55-65%, dominantly pellets, some pellets (1-2%) are translucent (transmit light through entire grain), dark orange color (not like surface stuff), forams well preserved (no dissolution) though some abraded. Small brachiopod bivalve sold at 5.30m. 5.40m Phosphorite decreases to approximately 50% as quartz content increases to approximately 25%. 6.0m phosphorite increases to 60-65% as quartz decreases to 10%.</p>
15.2	31.1	0.0	1.1	0.8	1.3	MIOCENE	FPS-1	6	[Lithology symbols]	
0.6	14	15	0.51	0.307	1.316	MIOCENE	FPS-1	7	[Lithology symbols]	
14	22	30	15	4.1				8	[Lithology symbols]	<p>FOSILIFEROUS SAND - Contact at 6.30m (only one chunk of material 16 x 4 cm was recovered). Yellowish gray (5Y 8/1), very silty phosphatic (4%), fossiliferous/calcareous sand (20-25%), carbonate cemented (strongly indurated), very fine to fine, subangular quartz sandstone. Phos as very dark brown, fine, polished, pellets and intraclasts. Trace 3 lingula fossil material severely recrystallized very few recognizable grains as forams, echinoid spines. *Very distinctive lithology, appears to be part of FPS -1 based on evidence.</p>
								9	[Lithology symbols]	
								10	[Lithology symbols]	

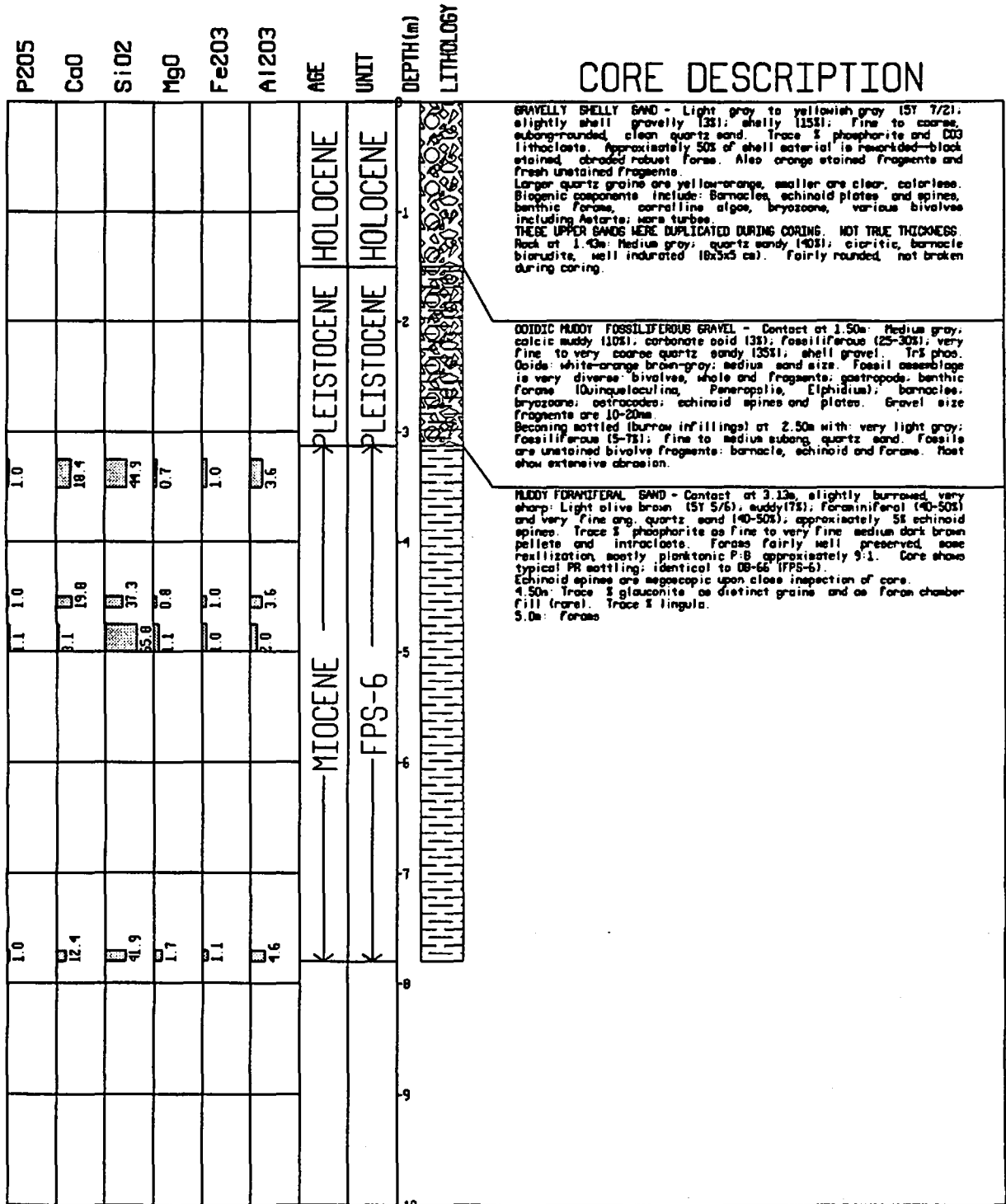
ON SLOW BAY CORE NUMBER: OB65

CRUISE: NSF O. BAY DATE LOGGED: 7-18-84 LATITUDE: 33.804 degrees
 LENGTH ATTEMPTED: 4.2m BY: P. MALLETT LONGITUDE: 77.620 degrees
 LENGTH OF CORE: 4.37m



ONslow BAY CORE NUMBER: OB67

CRUISE: NSF O. BAY DATE LOGGED: 7-24-84 LATITUDE: 33.717 degrees
 LENGTH ATTEMPTED: 5.6m BY: P. MALLETTE LONGITUDE: 77.433 degrees
 LENGTH OF CORE: 7.8m



ONslow BAY CORE NUMBER: 0B68

CRUISE: NSF 0. BAY DATE LOGGED: 5-8-84 LATITUDE: 33.833 degrees
 LENGTH ATTEMPTED: 3.8m BY: P. MALLETTE LONGITUDE: 77.284 degrees
 LENGTH OF CORE: 4.9

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
1.7	11.3	38.4	4.1	1.1	4.9	MIOCENE	OBS-3	1	[Lithology symbol]	<p>MUDDY SAND - Moderate olive brown (5Y 4/4), slightly phosphatic (2-3%), micaceous (2-5%); very muddy (4-5%); very fine calcic (3%) and very fine, angular to subangular quartz sand. Phosphorite as very fine, tan to medium brown pellets and intraclasts, lingula. Calc sand is mostly unrecognizable fossil fragments, some corroded echinoid spines (3%).</p> <p>Sections contain convoluted, discontinuous, laminae to blebs of light (yellowish gray) colored sediment similar to enclosing sediment except mud approximately 15% and calc sand approximately 10%.</p> <p>Mud increasing downward, becoming a very fine quartz sandy (3-5%) mud by 0.70m. Trace % glauconite. Trace to 1% sponge spicules.</p> <p>at 0.90m: Mud approximately 75%; a few calc sand grains recognizable as forams, very abraded. Color becomes Olive gray (5Y 3/2) with increased mud.</p> <p>at 1.75m: large forams (medium sand size) internal molds; appear phosphatic, reddish brown, no primary test material is left. May be Lenticulina. Forams preservation still very poor but show consistent downward trend toward better preservation in smaller forams. % phosphorite in sand fraction has increased approximately 7% though only 1-2% total sediment. Mostly skeletal and intraclastic skeletal - bone and lingula. Amber to dark brown. Intraclastic shows pitting and light (tan) color to very dark brown. Appears highly leached.</p> <p>at 2.10m: Forams mold is black (only one noted).</p> <p>at 2.40m: Phosphorite continues to increase to approximately 15-20% of sand fraction 4-5% of total sediment.</p> <p>at 2.70m: Phosphorite = 20-25% of sand fraction approximately of total sediment as mud decreases to approximately 40%. Abundant Forams molds (Trace!).</p>
								OBS-2	2		[Lithology symbol]
1.8	5.2	2.1	1.9	1.0	2.8			3	[Lithology symbol]	<p>PHOSPHATIC DOLOMITIC SAND - Contact at approximately 2.80 m. bioturbated with clasts of overlying lithology down to 3.10m. Yellowish gray (5Y 7/2); phosphatic (2-3%); muddy/dolomitic (10%). Fine, subangular to subrounded, quartz sand approximately 1% dark stained quartz grains, this staining also coats lingula and phosphorite may % estimate difficult.</p> <p>Lens between 3.35m and 3.67m. Interbedded light olive gray (5Y 5/2), very dry dolomitic clay with fine laminae and blebs (burrows) fine with above material. Swirled appearance like "Chocolate Swirl Ice Cream". Very sharp boundaries between the sediment types.</p> <p>3.67m to bottom: Sil; phosphatic (2-3%). Fine grained, clean quartz sand.</p> <p>4.0m: Muddy burrow structure 3cm height x 1.5cm wide.</p> <p>4.17-4.28m: dolomitic clay interbed as above.</p>
							4	[Lithology symbol]		
								5	[Lithology symbol]	
								6	[Lithology symbol]	
								7	[Lithology symbol]	
								8	[Lithology symbol]	
								9	[Lithology symbol]	
								10	[Lithology symbol]	

ONslow BAY CORE NUMBER: OB70

CRUISE: NSF O. BAY DATE LOGGED: 8-15-84 LATITUDE: 33.682 degrees
 LENGTH ATTEMPTED: 2.1m BY: P. MALLETT LONGITUDE: 77.645 degrees
 LENGTH OF CORE: 2.2m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						PLEISTOCENE		0		PHOSPHATIC CALCAREOUS SAND - Pale yellowish brown (10TR 6/2); all shell gravelly (38); phosphatic (38); fine-very coarse calcareous (40S) and fine to medium, subang-subround clean quartz sand. Phos dominantly pellets, fine, medium orange brown-black. Most highly polished; some pitting on a few orange grains. Calc sand is biogenic - Forams, gasts., bryozoans, echinoid, ostracods, pecten, balanus. Orange stained.
16	4.7	8.2	2.3	2.8	8.0	MIOCENE	K-FPS-2	1		
								2		PHOSPHATIC BIOGENIC SAND - Contact @ 0.35m with overlying quartz and phos intraclast gravelly horizon (1cm thick). Two distinct lithologies below contact. 1) Medium dark gray; phosphatic (58); shell gravelly (158); calc euddy (approximately 158); calcareous biogenic (30-35S) and very fine to very coarse, angular to rounded quartz sand. (Pleistocene) Forams include abundant <i>O. leucomela</i> and others. Very diverse fossil assemblage. Trace S pyrite; framboidal in forams. Trace to 1% glauconite. 2) Olive gray (5T 4/1); micaceous (1-3S); phosphatic (48); very fine quartz sandy (158); dolosilty mud. Phos as very fine to fine pellets, skeletal, and foram infillings (molds). All phosphatic material is amber, very, very highly leached and pitted. Very striking molds of Lenticulina and others. Looks just like OB-69 material though OB-69 = AF *3. Many phos grains are pitted--like natural "eggshells." Planktonic forams and echinoid spines have a phosphatic coating (see P.8. below). Color darkening downward. at 0.50m: beginning to get fine sand sized aggregates of crystallites--clinochloite though not recognizable as foram molds - disaggregated molds (May be up to 30% of sand fraction). at 1.20m: medium size phos pellets and intraclasts becoming darker (dark brown) fine and very fine material still) amber. Phosphatic increases to
								3		
								4		
								5		
								6		
								7		
								8		
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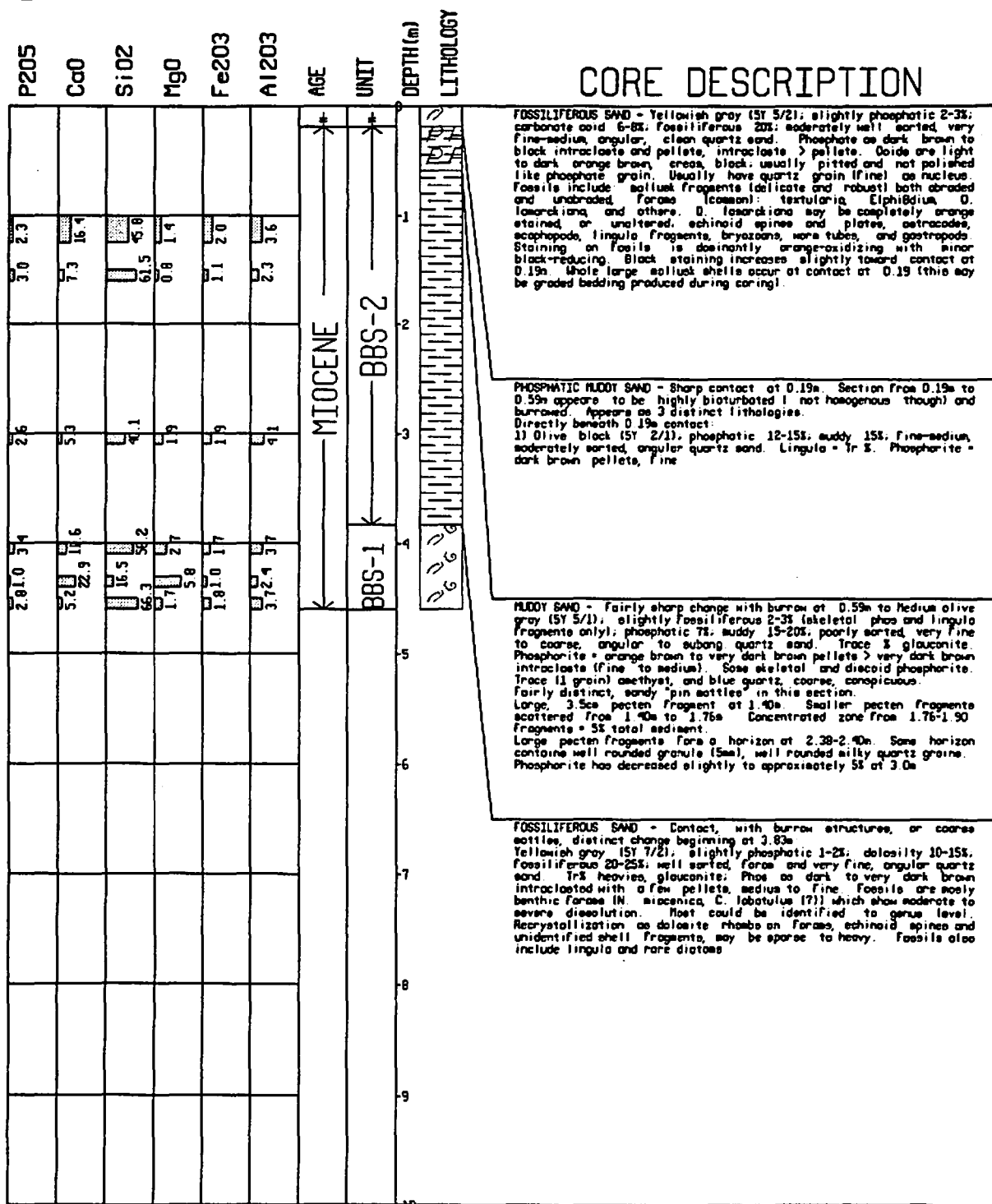
ONslow BAY CORE NUMBER: OB71

CRUISE: NSF O. BAY DATE LOGGED: 1-6-84 LATITUDE: 34.448 degrees
 LENGTH ATTEMPTED: 0.6m BY: P. MALLETTE LONGITUDE: 77.913 degrees
 LENGTH OF CORE: 1.1m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
14	12.9	3.2	1.0	1.5	3.0	MIOCENE	BBS-1	0	0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m 1.1m	<p>FOSSILIFEROUS SAND - Yellowish gray (ST 6/1); very slightly phosphatic. 1-15% carbonate acid 1-15%. Fossiliferous 10%. all fossil gravelly. Fine angular-subangular, well sorted clean quartz sand. Phos = fine, brown to very dark brown pellets and intracryst. Fossils include: mollusk shell frags (mostly unabrased, delicate), forams (Quinqueloculina sp., animal brown stain; and others), echinoid spines and plates, gasts., bryozoans.</p>
								1		<p>FOSSILIFEROUS SANDY DOLOMITIC SILT - Sharp contact at 0.11m with mottling or clasts, contain in surface sand to 0.19m (vibracore produced?). Yellowish light olive gray (ST 6/2); slightly phosphatic 2-3% ; fossiliferous 7-10% ; very fine quartz sandy 25-35% dolomite (= 1% of sand fraction). Phosphorite = fine-medium, very dark brown pellets > intracrysts. Fossils include: lingula, forams (benthic, very poorly preserved, dissolved and overgrown with calcite/dolo?) shells too small to make out shape, some suggest rhombel, echinoid spines (largely unaltered), diatoms (Trace to 1%), occasional medium-coarse quartz grain. Noticed one purplish (amethyst) coarse grain, also rare blue quartz, coarse. Phosphorite increases to 5% (of sand fraction) at 0.50m. Phosphorite increases to 7% (of sand fraction) at 0.75m, begin getting very coarse to coarse, brown to very dark brown intracrysts. Increase in coarse, blue and purplish quartz. Increasing diatom 1% (= Trace to 1% of sand fraction). Rhombic crystal overgrowths becoming visible (large enough) on forams, dolomite(?) and other finer crystals (shape can't be distinguished), dolomite (?) calcite(?).</p>
								2		
								3		
								4		
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ON SLOW BAY CORE NUMBER: OB72

CRUISE: NSF O. BAY DATE LOGGED: 1-2-84 LATITUDE: 34.453 degrees
 LENGTH ATTEMPTED: 3.65m BY: P. MALLETT LONGITUDE: 76.877 degrees
 LENGTH OF CORE: 4.17m



ON SLOW BAY CORE NUMBER: OB79

CRUISE: NSF 0. BAY DATE LOGGED: 8-20-84 LATITUDE: 34.635 degrees
 LENGTH ATTEMPTED: 4.2m BY: P. MALLETT LONGITUDE: 76.868 degrees
 LENGTH OF CORE: 6.0m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY
						← PLEISTOCENE →	← PLEISTOCENE →	0	
								1	
								2	
								3	
								4	
2.8	0.0	0.0	0.3	0.9	0.9	← MIOCENE →	← BBS-1 →	5	
5.2	4.2	57.8	1.4	2.9	2.3			6	<p>PHOSPHATIC MUDDY SAND - Olive gray (5Y4/1), suddy (25-35%), slightly phosphatic (1-2%), sub-rounded to well rounded, medium to coarse quartz (15%); subangular very fine quartz sand. Trs glauconite and heavies and shell material. Sediment is obviously biocidal. Phos is very dark brown, glossy to crasse colored and pitted. Slight increase in glauconite at 4.80m (still Trace S1). Slight increase in phosphite increases to 3 to 5%, average color somewhat darker though leaching is still evident on some medium to coarse grains are severely hollowed though grain surface still relatively smooth.</p> <p>at 5.70m: Sediment still biocidal though larger quartz grains dominantly medium size (15-20% of total sediment). Phosphite still shows pitting and hollowing effects.</p> <p>*NOTE: EXTREMELY DESSICATED CORE; STRUCTURES OBLITERATED</p>
								7	
								8	
								9	
								10	

ONSLow BAY CORE NUMBER: OB80

CRUISE: NSF 0. BAY DATE LOGGED: 5-8-84 LATITUDE: 34.605 degrees
 LENGTH ATTEMPTED: 4.65m BY: P. MALLETTE LONGITUDE: 77.000 degrees
 LENGTH OF CORE: 5.7m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						← PLEISTOCENE	← PLEISTOCENE	1		
						← PLEISTOCENE	← PLEISTOCENE	2		
						← PLEISTOCENE	← PLEISTOCENE	3		
						← PLEISTOCENE	← PLEISTOCENE	4		
1.0	19.5	40.1	1.8	0.9	1.6	← MIOCENE	← OBS-1	5	[Hatched Box]	<p>DOLOMITIC CALCIC SAND - at 4.90m: Light olive gray (5Y 5/2); dolomitic/muddy 10-15%. Fine calc (approximately 30%) and fine, subang quartz sand. Trace to 1% phosphite as dark brown-black int. and pellets (fine); trace % glauconite. Abundant dolo rhombs in silt fraction and as recrystallization on fossil material, very little dolo in sand fraction. Calcic sand mostly unidentified fragments - white to slightly yellowish white to light gray. Also barnacle and bivalve fragments, benthic forams (recrystallization will probably obscure even generic I.D. in most cases), ostracodes, sponge spicules and radiolarians also noted but very scarce.</p> <p>at 5.30m: Becoming suddier, up to 25-30%; visible silt sized dolo rhombs have decreased and those that are visible are just with in resolution of scope at 60x. Clay increase probably related to reduction in dolo xl size.</p> <p>Preservation of forams IP and BI increased slightly, a few were noted in this sample (still very scarce, may be more abundant in silt fraction).</p>
						← MIOCENE	← OBS-1	6		
						← MIOCENE	← OBS-1	7		
						← MIOCENE	← OBS-1	8		
						← MIOCENE	← OBS-1	9		
						← MIOCENE	← OBS-1	10		

ONslow BAY CORE NUMBER: OB90

CRUISE: NSF O. BAY DATE LOGGED: 6-28-81 LATITUDE: 34.640 degrees
 LENGTH ATTEMPTED: 6m BY: S. RIGGS LONGITUDE: 76.722 degrees
 LENGTH OF CORE: 6m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	1	[Lithology symbol: small circles]	<p>MEDIUM SAND - Med light gray clean qtz sand. Qtz = 90% fine grained and angular to sli rounded. shells and shell frags = 8%, both white and black stained. 1-2% black phosphorite, very fine grained; minor glauco and heavise</p> <p>Medium gray and shelly fine qtz sand, and increase to 20-25% occurring mainly as a matrix and a few clay laminae of the top of this unit; shells increasing to 1.1 m</p>
						PLEISTOCENE	PLEISTOCENE	2	[Lithology symbol: larger circles]	<p>MUDDY SANDY GRAVEL - Medium gray suddy and sandy shell gravel. shells = 40-50% of sediment, many whole shells and angular frags, mostly Nulinea. Mud = 20%. 30-40% qtz inc-grained. 3-5% glauconite pellets with many shell frags having a green stain; 1-2% blk phosphate (?), v glossy</p> <p>Shells becoming more diverse between 1.5 and 2m; large Buaycon, pectine, whole olive, Mercenaria frags, etc.</p>
						PLEISTOCENE	PLEISTOCENE	3	[Lithology symbol: larger circles]	<p>SANDY GRAVEL - Med dark gray sli suddy, sandy shell gravel. mud decrease to 5%; clay matrix; shells at 1.1 to 2m up to 60-70%; qtz 25-40% fine to med and med well rounded, poorly sorted, abd wood and org frags (2-3%); no glauco or phos. shells and oyst frags, barnacles, cardium, razor clams, etc—many black-stained</p> <p>Medium dark gray clay laminae at 2.94-3 m</p> <p>Similar to 2-3m with 5-10% mud</p> <p>Flatties of the lithology occur well down in lower unit—this could be Pleistocene filling of a very irregular hardgrounds surface. irregular fracture system, or a corroded slump block.</p>
						MIOCENE	BBS-8	4	[Lithology symbol: wavy lines]	<p>SHELLY SANDSTONE - Medium light gray, indurated hardgrounds surface with abraded hard rock borings filled with shiny black phosphate granules and Nulinea shells</p> <p>Calcic cemented, shell frags, fine qtz sandstone; calcic matrix = 30%. Qtz 60%, fine to med poorly sorted, sli rounded, calcic shell fragments angular medium to coarse sand size. 7-10% Phosphorite = 1-2% blk glossy grains</p> <p>Calcic matrix decreases to 5-10% cement at 3.65m to 5% at 4.3m Local pockets of green glauconite or gray stain within a very pale orange fine to medium qtz sand and 2-4% phosphorite. Calcic shell fragments up to 20% with 5% calc cement</p> <p>Qtz grains are fine to med very well rounded</p> <p>Large gray zones occur 4.9 to 5.1m and 5.2 to 5.5m</p>
						MIOCENE	BBS-8	5	[Lithology symbol: wavy lines]	
						MIOCENE	BBS-8	6	[Lithology symbol: wavy lines]	<p>PHOSPHATIC SAND - Olive gray, suddy, phosphorite quartz sand Good Pungo River</p> <p>Mud 20% greasy texture matrix. qtz = 70% mixed fine coarse and medium grained; phosphorite = 3-5% dark brown, occ. dolo rhombo. 5% white delicate shell fragments.</p>
								7		
								8		
								9		
								10		

ON SLOW BAY CORE NUMBER: OB91

CRUISE: NSF O. BAY DATE LOGGED: 6-30-81 LATITUDE: 34.635 degrees
 LENGTH ATTEMPTED: 6m BY: S. RIGGS LONGITUDE: 76.823 degrees
 LENGTH OF CORE: 6.25m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY
						HOLOCENE	HOLOCENE	0	<p>MEDIUM SAND - white very clean fine to medium quartz sand; 98% fine to medium and well rounded quartz sand with trace to 1% heavy min grains. matrix of moderately gray very slightly silty sand with 2-5% clay coating grains; Occ pure and gray clay clast, one very large clast of contorted clay laminae There is no shell material in this sediment Looks like a fluvial channel deposit Transition zone: large whole shells in sand as above (olive, versus fragment, cardiac, black oyster)</p>
329	14.15.1	0.00	1.44	1.43	1.12	PLEISTOCENE	PLEISTOCENE	1	
4.5	11.8	57.8	1.8	1.9	2.6	PLEISTOCENE	PLEISTOCENE	2	
3.8	10.2	0.0	1.2	1.0	0.8	MIOCENE	BBS-1	3	
219	7.6	0.0	0.9	1.3	1.0	MIOCENE	BBS-1	4	
1.6	7.09	0.0	0.98	1.2	1.0	MIOCENE	BBS-1	5	
1.1	6.0	0.0	0.6	1.2	1.2	MIOCENE	BBS-1	6	
1.8	56.3	0.9	2.2	4.1		MIOCENE	BBS-1	7	
						MIOCENE	BBS-1	8	
						MIOCENE	BBS-1	9	
						MIOCENE	BBS-1	10	

CORE DESCRIPTION

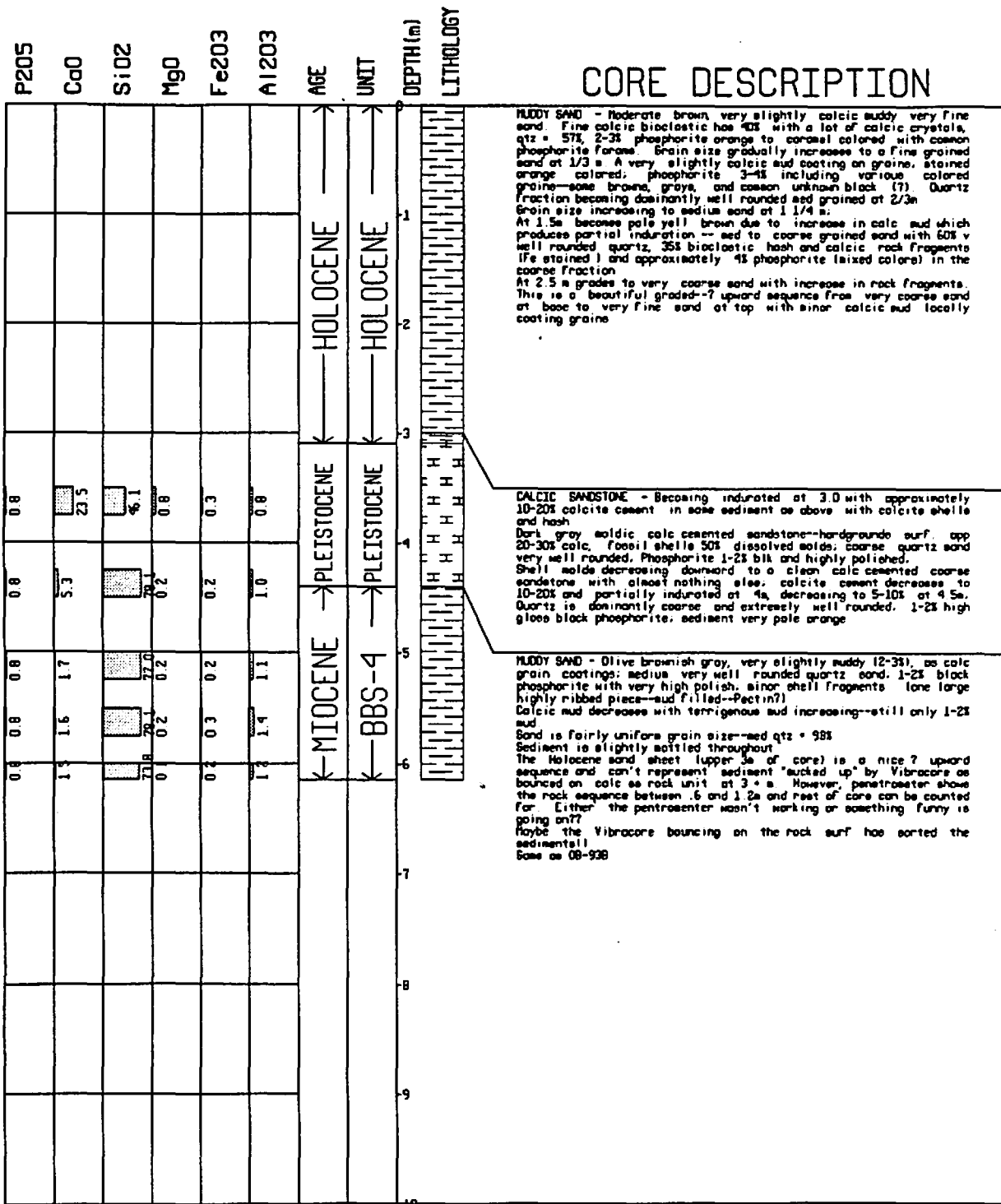
MEDIUM SAND - white very clean fine to medium quartz sand; 98% fine to medium and well rounded quartz sand with trace to 1% heavy min grains. matrix of moderately gray very slightly silty sand with 2-5% clay coating grains; Occ pure and gray clay clast, one very large clast of contorted clay laminae
 There is no shell material in this sediment
 Looks like a fluvial channel deposit
 Transition zone: large whole shells in sand as above (olive, versus fragment, cardiac, black oyster)

SHELLY MUDDY SAND - Medium dark gray very shelly and silty fine-medium quartz sand; mud is very sticky matrix = 20-25%. Quartz is very poorly sorted, the coarser fraction is very well rounded = 40-50%. shells are mostly whole *Mulinex*, *Vanocardium*, black oyster fragments = 20-30%.
 Very large *Nereocaris* fragments at 1.5m
 Becoming a silty sandy shell gravel below 1.5m, shells increase to 50% below 1.5m; many of the shells are fresh, many black stained
 Phosphate increases to 5-10% in basal section with common phosphate granules, mostly dark brown to blk; minor coarse qtz granules. (host of phosphate reworked from below)

MUDDY PHOSPHATIC SAND - Olive gray silty phosphatic quartz sand; Mud = 5-10% occurring as grain coatings, very calcareous. Quartz is poorly sorted v fine to med with coarser fractions being well rounded; calc shell = 1-2%. Phosphate is very fine to med dark brown pellets and intraclasts which range between 20-25%, minor glauconite. Several bottles and burrows filled with overlying sediment-color variations along burrows which suggest alteration along burrows and not disturbance resulting from coring.
 A few poorly developed clayey laminae, sediment is mostly uniform to slightly sorted, occ calcite cemented nodules (at 3.4m)
 Phosphate decreasing slightly and fine-grained forams common
 Qtz becoming very fine to fine grained, uniform and very angular. Dark green, very bright, glauconite becoming very oxidized = 5%. They occur as irreg loci within the mud rather than discrete grains--looks like its growing there rather than detrital.
 Sediment unit is very uniform and regular throughout with a gradual decrease in phosphate downward.

ON SLOW BAY CORE NUMBER: 0892

CRUISE: NSF O. BAY DATE LOGGED: 6-24-81 LATITUDE: 34.157 degrees
 LENGTH ATTEMPTED: 2.55m BY: S. RIGGS LONGITUDE: 76.788 degrees
 LENGTH OF CORE: 6.15m



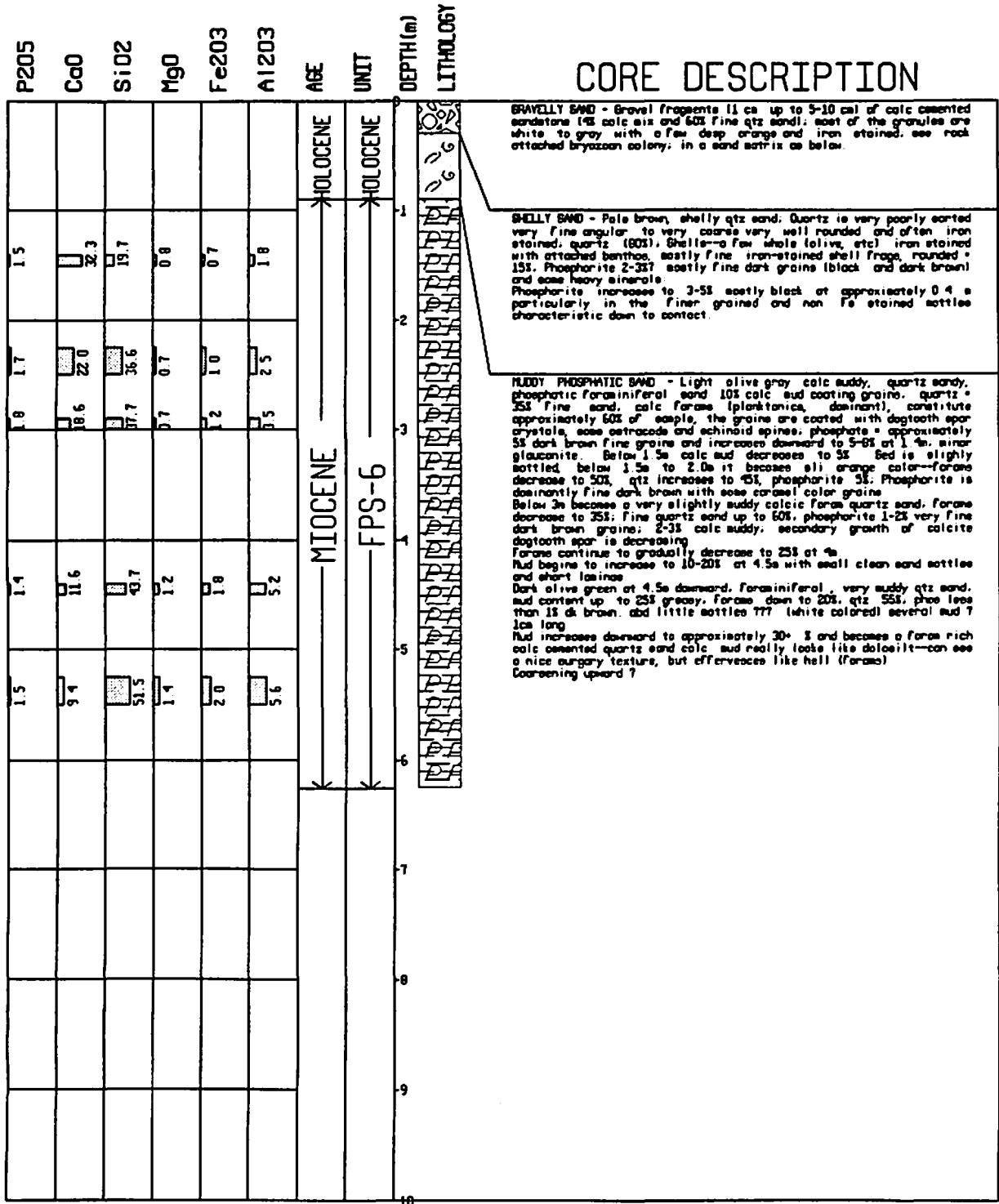
ONslow BAY CORE NUMBER: OB93A

CRUISE: NSF O. BAY DATE LOGGED: 5-8-84 LATITUDE: 34.160 degrees
 LENGTH ATTEMPTED: 0.15m BY: P. MALLETT LONGITUDE: 76.733 degrees
 LENGTH OF CORE: 0.15m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY
								0	<p>HOLOCENE SHELLY SAND - Poorly sorted, very clean, shelly fine quartz sand, shell = 20% fine to fine granule hash, each of which is iron-stained, lots of forams, quartz = 80% fine angular, a few grains < 15 looks like orange phosphate</p>
								1	<p>PLEISTOCENE SANDSTONE - Major hardground surface--only got a few chips back in barrel. A black stained line cemented quartz sandstone. Quartz is extremely varied in size up to very coarse sand, very well rounded, lots of shells in various stages of dissolution = 20%, app 10% white calcite oolites, Fe oxide stained on some surf with some glauconite (both on underside). Top side is mud 7 and looks a little like a phosphate surface with the silty blue black and iron glauconite along some of the grain boundaries. The green may be copper, not glauconite--it looks like some native copper flakes that are partially oxidized. One of the rock chips has a small 1 cm indurated layer of white calcite indurated bed on top (?) of the surface and rock as described above</p>
								2	
								3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

ON SLOW BAY CORE NUMBER: OB96

CRUISE: NSF O. BAY DATE LOGGED: 5-8-84 LATITUDE: 33.900 degrees
 LENGTH ATTEMPTED: 4.1m BY: S. RIGGS LONGITUDE: 77.455 degrees
 LENGTH OF CORE: 6.25m



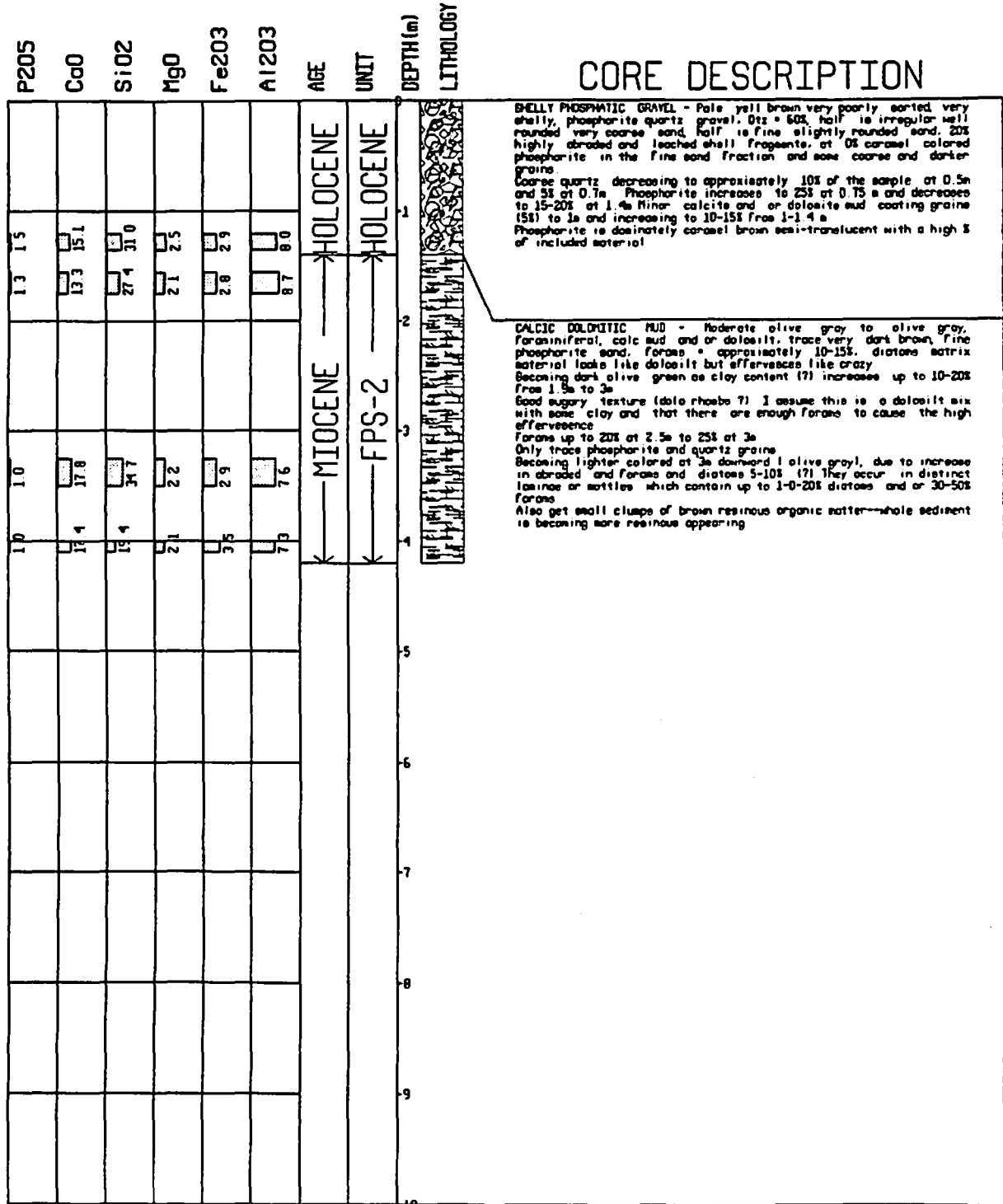
ON SLOW BAY CORE NUMBER: OB97

CRUISE: NSF O. BAY DATE LOGGED: 6-7-81 LATITUDE: 33.915 degrees
 LENGTH ATTEMPTED: 4.4m BY: S. RIGGS LONGITUDE: 77.492 degrees
 LENGTH OF CORE: 6.9m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY	CORE DESCRIPTION
						H	H	0	|	<p>COARSE SAND - Grayish orange, Fe stained very coarse sand with 20% shell debris 10 cm indurated bed of sandy black stained shell including lots of oyster. Becomes non-indurated and sized with coarse sand as above angular gray calcic mud</p> <p>MUDDY COLORED SAND - Dusky brown muddy and dolosilty fine qtz sand. 30-40% dusky brown organic(?) rich coarse dolosilt mixed with varying amounts of mud and organic matter--effervesces very slowly (good rhombic structures) Quartz sand is very fine to fine, well sorted and very angular, phosphorite trace dark brown and black glossy, few sattles of gray shelly sand from 0.2-0.3a occur down to 0.8a within the Pungo River.</p> <p>Grades to moderate olive brown at 1a and below, cat fo organic (?) matter decreases. 30% gray greasy dolosilt mud. Forams increase to approximately 10%, phosphorite increase 2-3% at 1a and app 5% at 1.4a dark brown grains. Mud grades to 20% at 1.4a; forams increase to 15% Grades to a dark dusky brown at 1.9a with increase in amount of organic (?) matter and dolosilty mud = 30-40%. Forams drop off to trace at 2a, phosphorite drops off 2-3% dark brown fine 1-2mm x 1cm sattles of fairly clean sand. Mud increases to 60% flatties coloring pattern</p> <p>Slightly sandy dolosilt moderate olive brown. Mud increase 70%, sediment becoming lightly lighter colored dolosilt mud to 90% very coarse silt rhombs, phos = tr</p> <p>High degree of color settling becoming dark olive gray--muddy dolosilty qtz sand. Dolosilt constitutes approximately 40-50% and very fine quartz sand = 50-60% grading downward into a sandy dolomud</p> <p>Dolosite increasing downward to 80% at 5a occ forams, color remains dark (organic? matter) Phosphorite = approximately 1% Dolomite is much finer grained than the section from 3.6 to 4.6a and probably mixed with clay minerals--greasy texture Mud up to 90%</p> <p>Quartz sand increasing to 30% calc forams increasing to 10%, phosphorite up to 1% in lower 20-25ca Core from 0.35a to 6.9a actually ?</p>
23	8.4	53.2	0.8	1.3	4.2			1	|	
3.1	5.8	22.1	1.5	1.7	5.2			2	|	
1.4	13.0	33.3	6.4	1.6	4.8	MIOCENE	FPS-2	3	|	
1.2	2.8	16.4	0.1	0.7	0.7			4	|	
								5	|	
								6	|	
								7	|	
								8	|	
								9	|	
								10	|	

ONslow BAY CORE NUMBER: OB98

CRUISE: NSF O. BAY DATE LOGGED: 7-6-81 LATITUDE: 33.783 degrees
 LENGTH ATTEMPTED: 3.15m BY: S. RIGGS LONGITUDE: 77.633 degrees
 LENGTH OF CORE: 4.2m



ONslow BAY CORE NUMBER: OB100

CRUISE: NSF O. BAY DATE LOGGED: 8-3-82 LATITUDE: 34.625 degrees
 LENGTH ATTEMPTED: 7.5m BY: S. RIGGS LONGITUDE: 76.713 degrees
 LENGTH OF CORE: 8.7m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	1	[Lithology symbols]	<p>FINE SAND - Light olive gray, very clean fine quartz sand 2 to 3% fine white shell fragments. Becoming olive gray with gray-stained shell fragments (Echin, Mercenaria, Oyster). Phosphorite increasing to 1 to 2% with trace of glauconite and very fine heavies. Articulated cross-hatched Lucin. This could be dredge spoils from inlet dredging.</p>
						PLEISTOCENE	PLEISTOCENE	2	[Lithology symbols]	<p>MUDDY FOSSILIFEROUS SAND - Medium dark gray, very muddy (25%), slightly fossiliferous (5%) quartz sand. Bottles of sands from above.</p> <p>Medium dark gray, muddy (5 to 10%), fossil (20%) poorly sorted, fine to medium quartz sand. All shells are sized white and gray, very coarse and show signs of secondary alteration--all hash and seal whole shells.</p> <p>2 to 3% phosphorite grains with trace of glauconite.</p> <p>Whole dark stained Mercenaria.</p> <p>Medium gray, muddy (10 to 15%), very fossil (25 to 50%) medium quartz sand. Shells are sized white, gray, and black stained (leastly stained). Mud contains a large carbonate component, sticky. Shells are Macoma-Rulinea type with barnacles.</p> <p>Medium gray, muddy (10 to 15%), very sandy shell gravel (50 to 60%). Mud same as above, sand is coarse and very well-rounded shells such as coarse-Rulinea, Macoma, Cockle, Venercaidius. Increase in light colored shells.</p>
						* * *	* * *	3	[Lithology symbols]	
						* * *	* * *	4	[Lithology symbols]	
						MIOCENE	BBS-8	5	[Lithology symbols]	<p>LAMINATED DOLOMITIC CLAY - Grayish olive green, finely laminated, slightly dolomitic (1 to 5%) clay. Contact has bottles of overlying shells down 2 to 4cm. Minor conc (1 to 5%) decomposed shell material in scattered bottles along with abundant quartz sand grains and occasional Lingula fragment.</p> <p>Becoming slightly sandy.</p> <p>Grayish olive green, slightly dolomitic, clayey (10 to 20%), phosphatic (1 to 5%) sand. Quartz sand is fine to medium and very well rounded to angular-acute in bottles and laminae which contain 70-90% sand--these laminae are light olive gray in the darker gray olive green clayey sediments--increasing downward. Phosphorite occurs in sandy laminae and bottles and is increasing downward as the sand increases--fine to medium dark brown intraclasts.</p> <p>Phosphorite decreases, trace glauconite all way through--very fine sand and/or clean sand vertical bottles (burrows?) as above.</p> <p>Sand bottles decrease, sediment becomes fairly uniform and grayish olive green.</p> <p>Rhombs scattered throughout--look like dolomite--but could be calcite--sediment effervesces fairly strongly.</p> <p>Clay content increasing (10 to 30%) in bottles and poor laminae.</p> <p>Phosphorite throughout unit ranges from very fine sand to granule size intraclasts, dark brown, with only occasional pellet in very fine fraction. Trace glauconite throughout in very fine sand fraction.</p> <p>Clay content increases to 20 to 30% throughout with sand bottles.</p> <p>Grayish yellow green, calcareous (approximately 25%), fine quartz sand. Calcite occurs as silt sized clear rhombs in the interstices between quartz grains and is explosively effervescent, occasional fine sand-sized white powdered grains which look like rotten shell fragments. Unit is very tight--brake air hose when got into it.</p> <p>Limit of penetration.</p>
						MIOCENE	BBS-8	6	[Lithology symbols]	
						MIOCENE	BBS-8	7	[Lithology symbols]	
						MIOCENE	BBS-8	8	[Lithology symbols]	
						MIOCENE	BBS-8	9	[Lithology symbols]	
						MIOCENE	BBS-8	10	[Lithology symbols]	

ON SLOW BAY CORE NUMBER: OB102

CRUISE: NSF CRUISE DATE LOGGED: 3-26-83 LATITUDE: 33.830 degrees
 LENGTH ATTEMPTED: 8.8m BY: S. W. SNYDER LONGITUDE: 77.400 degrees
 LENGTH OF CORE: 8.8m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY							
						MIOCENE	FPS-6	1	NOTED MUDDY GLAUCONITIC PHOSPHATIC QUARTZ SAND - Upper 35cm of core somewhat suddier, but remaining upper 3m uniform if it description of sample P11 Sediments irregularly settled, slightly suddy sections are dark yellowish brown (10TR 4/2) and sandier parts are moderate yellowish brown (10TR 5/4) P1 clean, poorly sorted, slightly phosphatic (?) (1 to 2%), foraminiferal (30 to 40%), subangular to subrounded, fine to medium quartz sand, trace of glauconite Many dark grains appear to be quartz with thin veneer of glossy black material (not phosphorite?) smaller quartz grains angular and clear, larger ones subrounded, grayish, translucent Typical brown-channel benthic forams assemblage Planktonics quite abundant (nearly as abundant as benthics) Echinoid spines common, shell fragments rare (No recovery at -3.0 to -3.2m) P2 similar to P1 in most respects but quartz more abundant and forams less abundant (15 to 20%) Also quartz is noticeably coarser (still largely fine sand but coarse sand sized particles more common (they are grayish and translucent) Glauconite is phosphate slightly more abundant (3 to 4%) isolated, irregularly distributed suddy patches Thin zone of coarse medium gray sand, faunally similar to sediment above and below P3 more like P1 than P2 Forams fauna, however, not as well preserved (more breakage and recrystallization) Sediment indistinguishable from that in P1 P4 light to medium gray, poorly sorted, subangular to subrounded, phosphatic (5 to 6%), foraminiferal (10 to 15%), fine to medium to coarse quartz sand Trace glauconite, echinoid sands very clean (virtually no mud at all) Forams decrease in abundance downward Only 5% of fauna in P5 Phosphate remains at approximately 5 to 6%, otherwise same as P4 P5 a dusky yellow (51 5/4), indurated zone approximately 10cm thick 80% forams tests, 10% quartz, 1 to 2% phosphate, trace glauconite calcite cement from partial dissolved of forams and then reprecipitated Lower indurated zone similar but dissolved and recrystallization of forams more extensive (somewhat better cemented) Lower zone about 5 cm thick Sands between indurated layers down to 8.3m are yellowish, fine to med, slightly phosphatic (1 to 2%), foraminiferal (15 to 20%), quartz sands Color from recrystallized forams tests -8.3m to bottom is coarser, med gray, more phosphatic (5 to 6%) sand Very similar to those higher in core 1-5 to -7a)							
								2	3	4	5	6	7	8	9	10

ON SLOW BAY CORE NUMBER: OB103

CRUISE: NSF 0. BAY DATE LOGGED: 3-26-83 LATITUDE: 34.000 degrees
 LENGTH ATTEMPTED: 4.1m BY: P. MALLETT LONGITUDE: 77.382 degrees
 LENGTH OF CORE: 5.9m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						MIOCENE	MIOCENE	0	P	PHOSPHATIC FOSSILIFEROUS SAND - Phosphatic (3 to 4%), shelly (6 to 7%), fine to medium quartz sand. Phosphate—light brown to black pellets with occasional intraclast. Fossil fragments—fine to coarse sand bivalves, gastropods, echinoid spines and plates. Forams present but not abundant. Quartz—fine to med sand size, subangular to rounded subspherical, clear (angular) to cloudy (subangular), slight coarsening downward to contact. Sharp contact at -0.7m
						MIOCENE	MIOCENE	1	P	
						MIOCENE	MIOCENE	2	P	PHOSPHATIC MUDDY SAND - Greenish gray (5-6T 4/1), silted, phosphatic (2%), silty (5 to 10%), fine grained quartz sand. Trace to 1% shell fragments. Phosphatic—fine grained brown pellets and skeletal fragments. Quartz—subangular to angular, subspherical to bladed. Forams—trace. Nottles—1/2 cm to 5cm in length—both and perpendicular and parallel to core. Nottles generally phosphatic (5 to 6%) fine grained quartz sands. Some are clean white others are slightly brown suggesting fine disseminated organic matter or phosphate. Same as above with similar types of nottles. Mica has increased from trace to 1%. Mud increased to 15%. Some as above—few forams—at this point faunally not diagnostic of FP4. Mud approximately 15 to 20%. Forams—increase to trace 1%. Mud increased approximately 25% phosphate approximately 15 to 6%. 1.1m actual penetration
						MIOCENE	MIOCENE	3	P	
						MIOCENE	MIOCENE	4	P	
						MIOCENE	MIOCENE	5	P	
1.1	1.2	5.5	5.1	70.1	1.6			6	P	
5.5	5.1	65.3	1.4	1.1	3.3			7	P	
								8	P	
								9	P	
								10	P	

ON SLOW BAY CORE NUMBER: OB104

CRUISE: NSF 0. BAY DATE LOGGED: 2-16-83 LATITUDE: 34.000 degrees
 LENGTH ATTEMPTED: 5.6m BY: SR RIGGS LONGITUDE: 77.440 degrees
 LENGTH OF CORE: 7.2m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	0	G	<p>SHELLY SAND - Light gray, very clean, poorly sorted, shelly (10 to 20%), medium quartz sand, abraded modern shells and shell fragments with 2 to 2% gray stained shell fragments. Trace amounts of glossy black grains (not phosphoritic) increase to 1 to 2% downward. Becoming acid sorted downward.</p> <p>Trace amounts of blk phosphorite grains with a very slightly brown tint to them—these are different than the glossy black grains which are not phosphorite.</p> <p>Same as above.</p> <p>Shell fragments are principally molluscan (bivalves, gastropods) Also echinoid spines and plates, bryozoan fragments 1 to 2% forams (ammonites, cibicides, perrinitids).</p> <p>Trace amounts of apparently phosphatized internal solids.</p> <p>Still very clean, poorly sorted, shelly, medium quartz sand 1% of stained shell fragments increasing.</p> <p>1% of glossy black grains (not phosphoritic) decreasing (only a trace) forams slightly more abundant (several planktonic specimens noted) rare ostracods.</p> <p>Very slightly suddy, very poorly sorted, med. to coarse quartz. sand. Some quartz grains are pebble sized.</p> <p>Shell fragments coarser, many are complete.</p> <p>Large perrinitid forams rare but rather conspicuous.</p>
						HOLOCENE	HOLOCENE	1	G	
						HOLOCENE	HOLOCENE	2	G	
						HOLOCENE	HOLOCENE	3	G	
						HOLOCENE	HOLOCENE	4	G	<p>MUDDY PHOSPHATIC SAND - P1 huddy (5%), slightly phosphatic (1 to 2%), foraminiferal (approximately 30%), moderately sorted, angular to subangular, fine quartz sand.</p> <p>Planktonic forams nearly as abundant as benthics.</p> <p>Phosphorite grains mostly black, few light brown skeletal grains.</p> <p>Sediment very uniform at this level, light olive gray.</p> <p>Pungo river sediments become mottled at -5.3 m (most still light olive gray but mottled are lighter gray, coarser grained, more poorly sorted, with shell fragments and forams that typify the overlying Pleistocene/Holocene - -ds).</p> <p>Material in these sections represents contamination.</p> <p>-5.6 m. Actual Penetration.</p>
						MIOCENE	FPS-2	5	G	
						MIOCENE	FPS-1	6	G	<p>MUDDY PHOSPHATIC SAND - P2 at -5.7m mottles change in aspect (light gray, gray suddier, subhorizontal, more laterally continuous, consists of suddy, slightly phosphatic (5%) well sorted, subangular, fine quartz sand).</p> <p>These mottles are PR sediments and possible represent bioturbated zones (no trace of forams or any sort of calcareous remains).</p> <p>P3 at 6m sediment change to dark olive gray (5% 3 2), moderately suddy (5 to 10%), quartz bearing (15 to 20%), rather poorly sorted, but predominantly fine phosphorite sand (approximately 70% phosphatic sediments).</p> <p>Unfossiliferous.</p> <p>Pellets and intracrystals mostly black.</p> <p>Skeletal fragments mostly brown.</p>
						MIOCENE	FPS-1	7	G	
						MIOCENE	FPS-1	8	G	
						MIOCENE	FPS-1	9	G	
						MIOCENE	FPS-1	10	G	

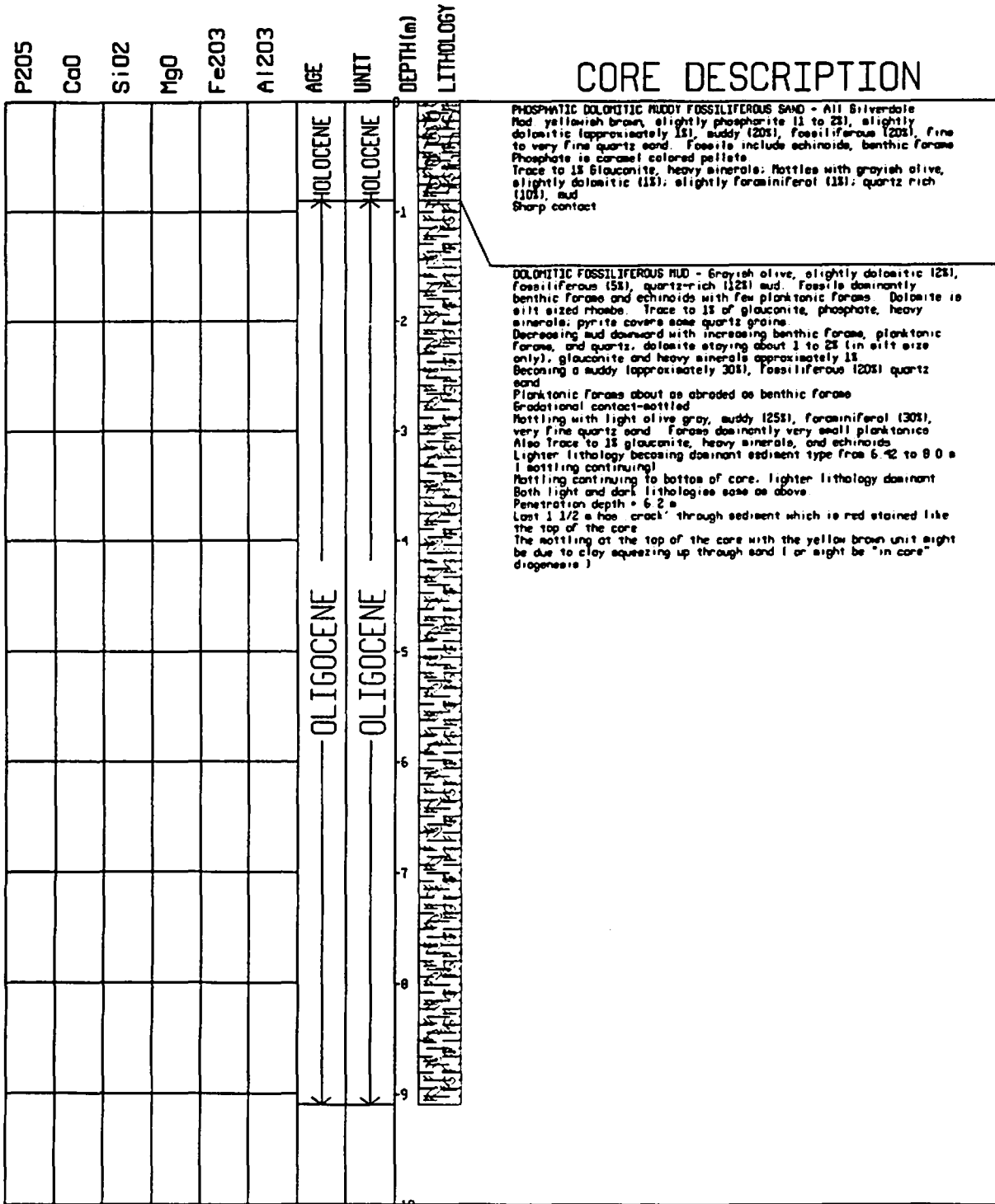
ON SLOW BAY CORE NUMBER: OB105

CRUISE: NSF 0. BAY DATE LOGGED: 9-17-82 LATITUDE: 33.964 degrees
 LENGTH ATTEMPTED: 6.05m BY: S. RIGGS LONGITUDE: 77.492 degrees
 LENGTH OF CORE: 9.1m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
								0		<p>MUDDY PHOSPHATIC QUARTZ SAND - Olive gray, muddy (15 to 15%), Forams (10%), phosphatic (1 to 3%), very fine quartz sand Slightly mottled with light olive gray, clean to slightly muddy (0 to 5%) very fine sand burrows (1?) in an olive gray, muddy (5 to 15%) very fine to fine quartz sand matrix. Phosphorite occurs as dark brown pellets with some skeletal grains, trace glauconite. Quartz sand is very fine to fine sand and quite angular, several % Feldspar, clear, and angular. Slight increase in phosphorite at approximately 1.5m Forams increase approximately 15% Sediment is characterized by a very subtle mottling of the lighter and cleaner sand sediments as described above. Clay is olive drab to very greasy appearing Mottling decreasing, very dark olive gray, very uniform Phosphate increasing very gradually downward Mottling increases downward Phosphorite concentration in light colored bottles is approximately 5% whereas Phosphorite concentration increases to approximately 10% in the darker bottles Core becoming darker with increasing phosphate concentration downward</p>
1.8	11.1	58.9	1.1	1.3	3.7			1		
2.2	7.6	4.2	0.9	1.4	3.7			2		
3.7	12.1	52.5	1.7	1.3	3.8			3		
5.6	13.4	53.5	0.6	1.1	2.8			4		
9.6	21.0	41.6	0.7	1.0	2.7			5		
11.6	20.9	35.5	0.8	1.0	2.8			6		
14.1	18.2	47.0	0.5	1.2	2.8			7		
								8		
								9		
								10		<p>MUDDY PHOSPHATIC SAND - Dark olive gray, muddy (20%), Forams (10%), phosphorite fine quartz sand Bottles very well developed - one nice clean sand burrow surrounded by lite, slightly muddy sand which looks dolomitic, grades outward to dark suddy sand. I don't understand these mottles!! This sand is very greasy and looks very organic-rich (?) (Impregnate and make thin sections here!) Phosphorite is very dark brown fine to medium sand intracasts with minor fine to very fine pellets and medium skeletal grains Quartz is very fine grained angular, forams decreasing downward Occasional indurated as pebbles 2 to 3cm with borings (?) on surface and very poor fossil solids (?) Abundant angular shell fragments up to 2 to 3cm which look like oyster fragments Phosphorite drops off very fast, few shark teeth Yellowish gray green, slightly muddy (5%), fossiliferous (2 to 5%), very fine to fine quartz sand Fossils approximately 10 echinoid spines approximately 15% abraded calcite fine to med sand grains Glauconite - 1 to 3% very fine, trace phosphate Mild mottling throughout, (1 to 3cm) stretched bottles of intermediate olive gray greasy muddy (10 to 15%), phosphorite (1 to 5%) very fine to fine quartz sand (as above) These bottles occur throughout with an 8 cm bottle at 8.5m and a 6cm bed at 9m Bottles show a lot of vertical deformation down the side of the core barrel! Is this Silverdale or just interbedded phosphorite and non-phosphorite facies? interesting differences in the lithologies! What's happening diagenetically? Are these diagenetic rather primary?</p>

ON SLOW BAY CORE NUMBER: OB106

CRUISE: NSF 0. BAY DATE LOGGED: 3-26-83 LATITUDE: 33.848 degrees
 LENGTH ATTEMPTED: 6.2 m BY: L. STEWART LONGITUDE: 77.627 degrees
 LENGTH OF CORE: 9.1 m



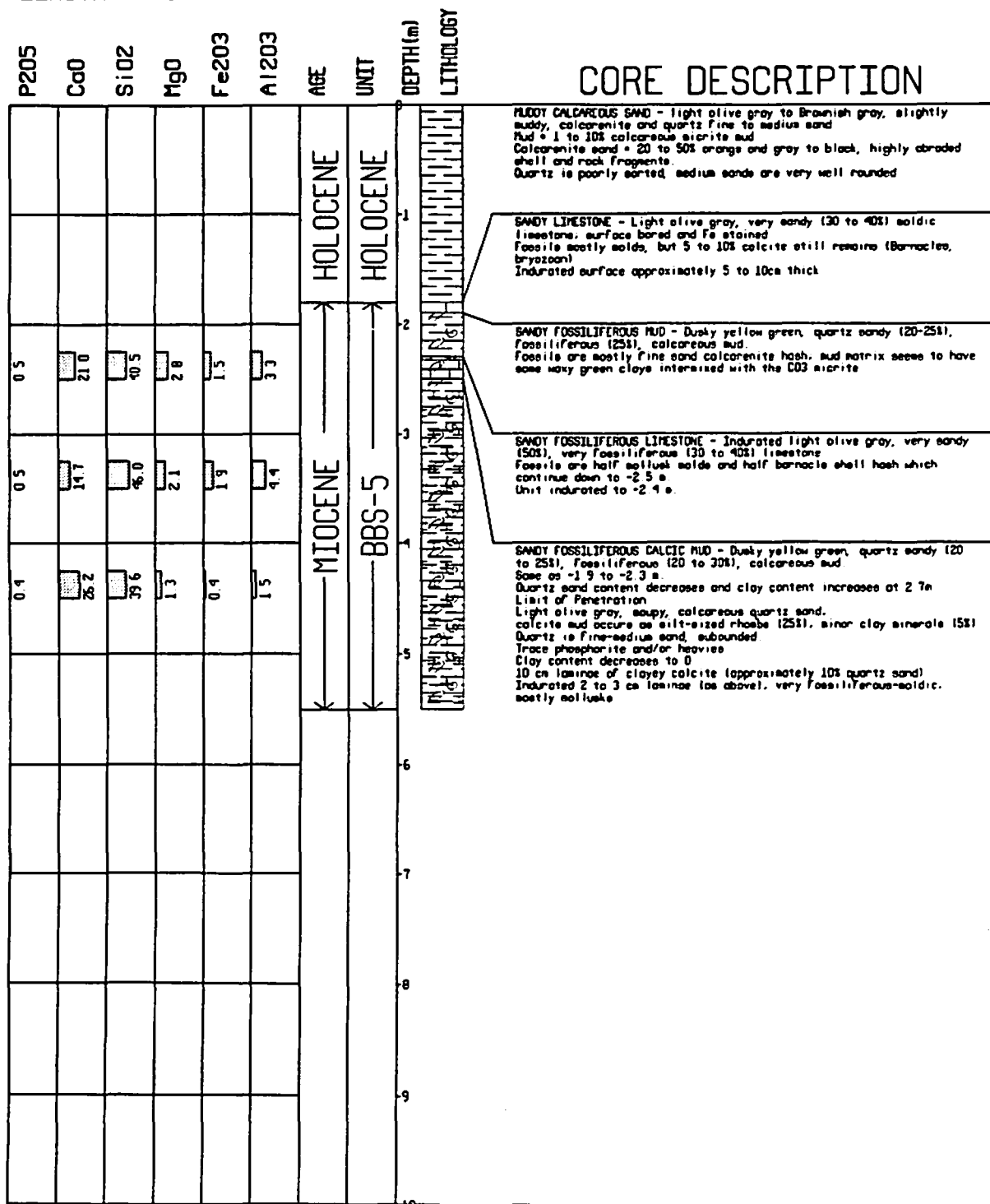
ON SLOW BAY CORE NUMBER: OB107

CRUISE: NSF O. BAY DATE LOGGED: 3-27-83 LATITUDE: 33.773 degrees
 LENGTH ATTEMPTED: 1.8 m BY: L. STEWART LONGITUDE: 77.480 degrees
 LENGTH OF CORE: 2.78 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION			
12	7.1	39.4	5.2	4.2	9.8	← MIocene →	← FPS-6 →	0	P5	<p>PHOSPHATIC FOSSILIFEROUS SAND - dusky yellow grading downward to light gray, very slightly phosphatic (18), fossiliferous (40), subrounded medium coarse quartz sand. Phosphate is dark brown and corrasel pellets. Fossils include benthic and planktonic forams, echinoid spines and plates, bivalves and bryozoans. Bivalves are broken and stained red at top and gray at bottom of this unit. Sharp contact.</p>			
13	2.0	28.7	2.7	4.8	1			2	<p>DOLOMITIC CLAY - Olive grey tight silty clay. Very fine silt and is composed of quartz and minor dolomite (Can't estimate % silt). Very minor fine silt sized pyrite present. Grading downward into medium dark grey tight clay. Actual penetration.</p>				
15	3.1	25.5	2.8	4.5	10.5			3	4	5	6	7	8	9	10

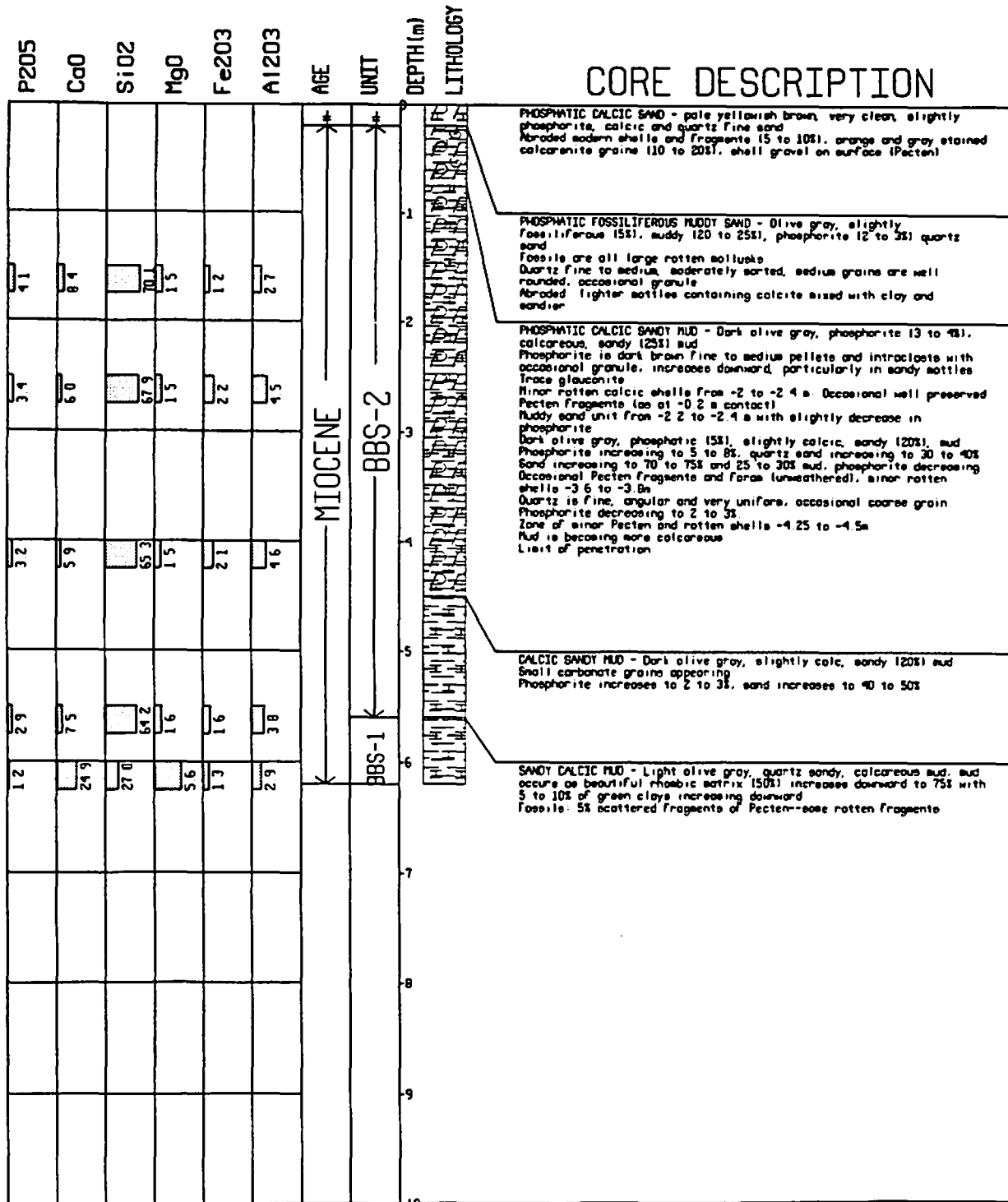
ON SLOW BAY CORE NUMBER: OB108

CRUISE: NSF 0. BAY DATE LOGGED: 8-4-82 LATITUDE: 34.455 degrees
 LENGTH ATTEMPTED: 3.2 m BY: S.R. RIGGS LONGITUDE: 76.848 degrees
 LENGTH OF CORE: 5.5 m



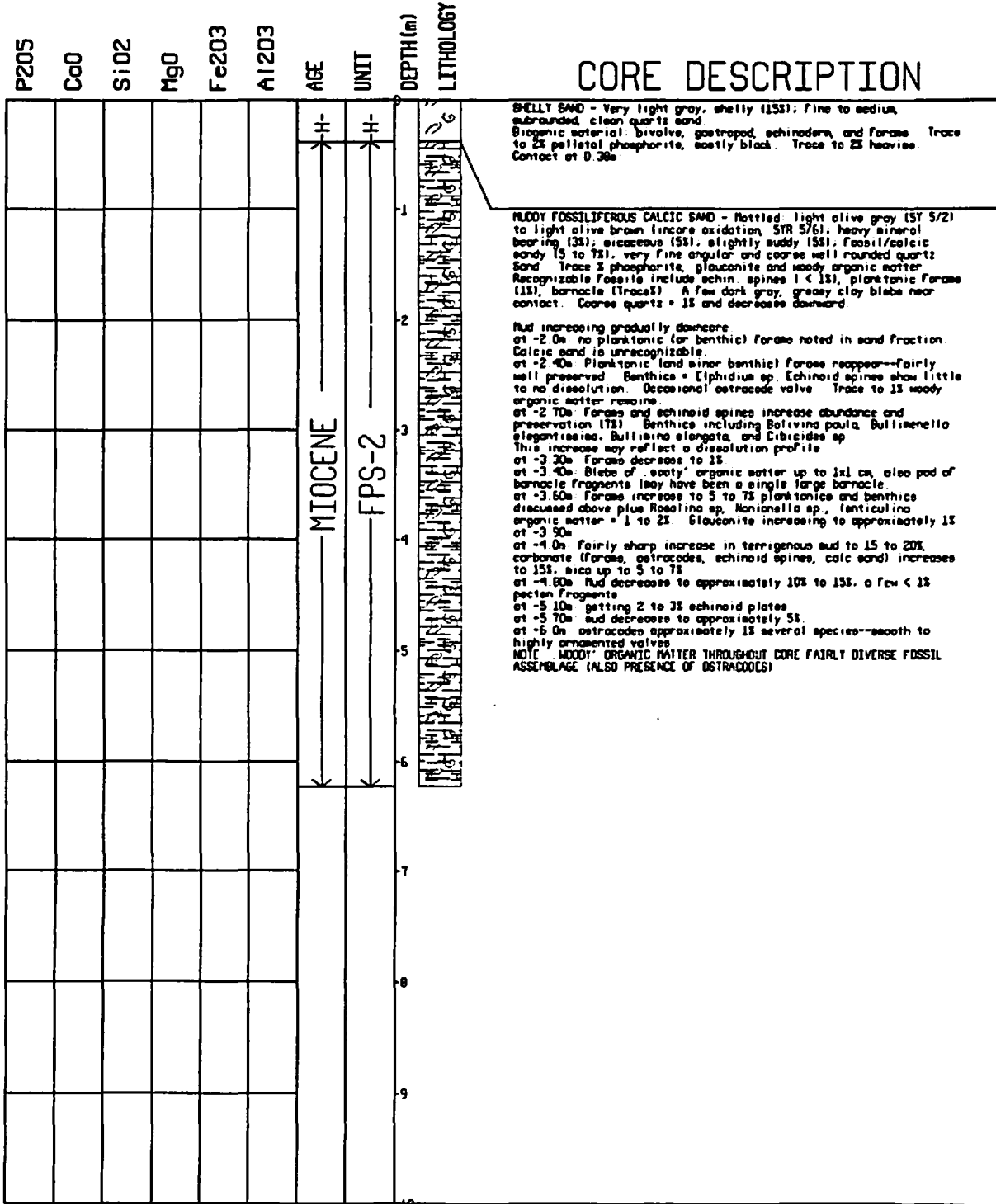
ONslow BAY CORE NUMBER: OB109

CRUISE: NSF O. BAY DATE LOGGED: 8-9-82 LATITUDE: 34.453 degrees
 LENGTH ATTEMPTED: 4.3 m BY: S.R. RIGGS LONGITUDE: 76.865 degrees
 LENGTH OF CORE: 6.2 m



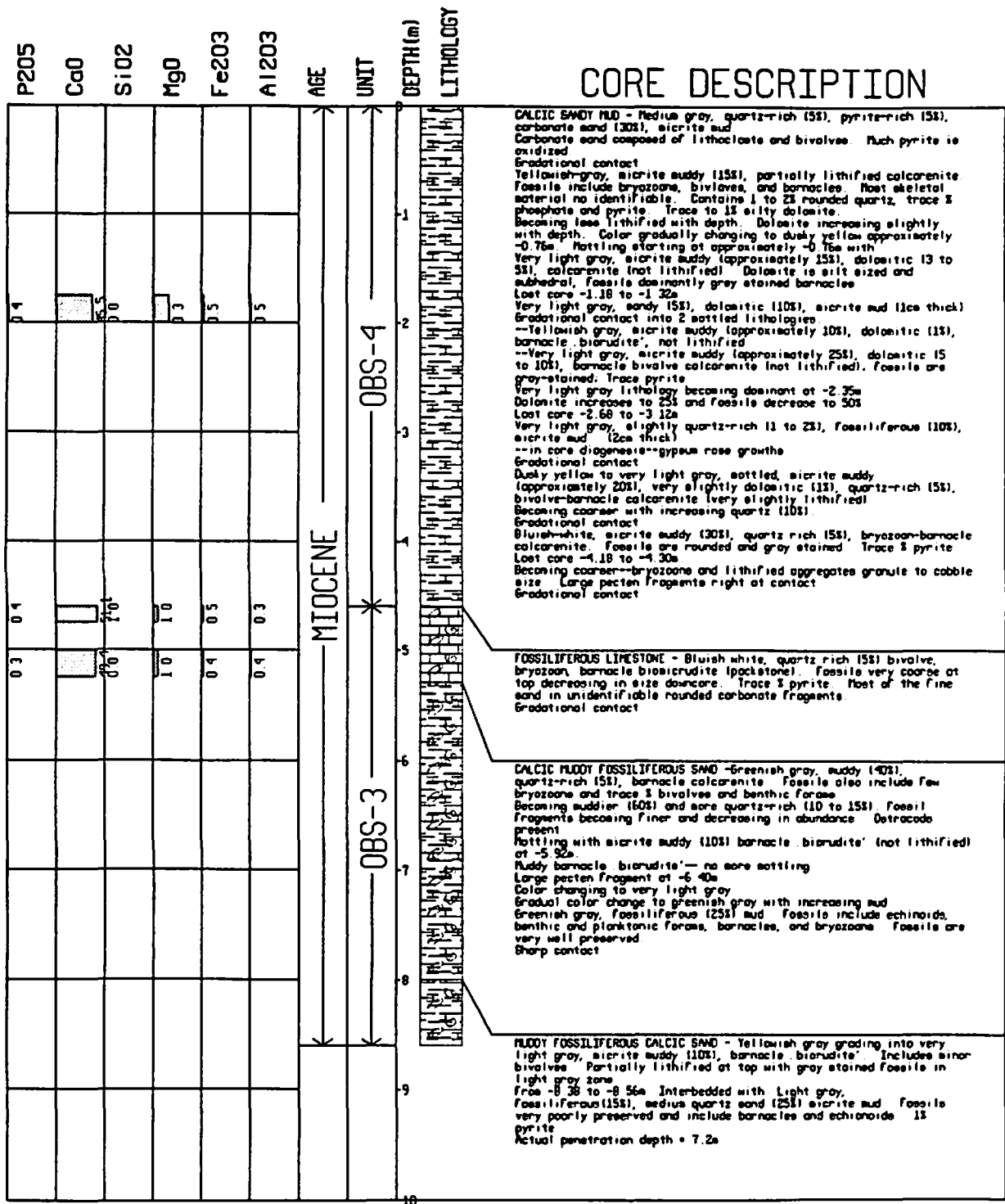
ON SLOW BAY CORE NUMBER: OB110

CRUISE: NSF 0. BAY DATE LOGGED: 3-26-83 LATITUDE: 34.428 degrees
 LENGTH ATTEMPTED: 5.6 m BY: P. MALLETTE LONGITUDE: 77.132 degrees
 LENGTH OF CORE: 6.23 m



ONslow BAY CORE NUMBER: OB111

CRUISE: NSF 0. BAY DATE LOGGED: 3-27-83 LATITUDE: 34.615 degrees
 LENGTH ATTEMPTED: 7.2 m BY: L. STEWART LONGITUDE: 76.942 degrees
 LENGTH OF CORE: 8.56 m



ONslow BAY CORE NUMBER: OB113A

CRUISE: NSF 0. BAY DATE LOGGED: 4-2-83 LATITUDE: 34.163 degrees
 LENGTH ATTEMPTED: 1.8 m BY: P. MALLETTE LONGITUDE: 77.325 degrees
 LENGTH OF CORE: 2.3 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						← MIOCENE →	← FPS-1 →	0	[Symbol]	<p>SILTY GRAVELLY PHOSPHATIC SHELL SAND - Light olive gray (SY 5/2); slightly silty (CO3), gravelly, phosphatic quartz sandy, shell hash, well rounded microporiferite fragments (coarse sand-gravel) dark brown-black. Shell fragments consist of pectens and oysters, both abraded and unabrased whole shells. Quartz grains subangular to rounded. Occasional Fe cemented aggregates and grains (K13), garnet (?) K13.</p> <p>Sharp contact at -0.18m, indurated zone 1cm thick in core, dolomitic (?) quartz sand, pyritic crust, hardground.</p> <p>Mod olive brown, greenish gray, mottled, varicolored, sugary quartz sandy pods and glauconitic (disseminated) medium quartz sand, dark brown pelletal phosphorite.</p> <p>Moderate olive brown, sugary, dolomitic (?) partially indurated, slightly phosphatic quartz sand (same as above indurated unit) phosphorite pelletal, skeletal.</p>
								1	[Symbol]	<p>PHOSPHATIC MUDDY SAND - Contact (?) at -0.31m Olive gray (SY 3/2), sugary, dolomitic (?) phosphatic, muddy, fine quartz sand. Phosphate is dark brown pelletal and slight amount of skeletal. Life wispy mottling in upper sections, larger, very distinct bottles or pods at -0.66m and -0.73m. Bottle at -0.66, dark yellowish orange CO3 muddy with fine very angular to angular quartz sand, dark brown pelletal phosphorite.</p> <p>Mottling becoming inverse of above dark bottles set in lighter matrix, matrix is grayish olive, bottles olive gray, mud has decreased, fine angular, slightly muddy, phosphatic quartz sand, trace glauconite, minor CO3 mud component.</p>
								2	[Symbol]	
								3	[Symbol]	
								4	[Symbol]	
								5	[Symbol]	
								6	[Symbol]	
								7	[Symbol]	
								8	[Symbol]	
								9	[Symbol]	
								10	[Symbol]	

ONslow BAY CORE NUMBER: OB113B

CRUISE: NSF 0. BAY DATE LOGGED: 3-26-83 LATITUDE: 34.163 degrees
 LENGTH ATTEMPTED: 3.6 m BY: S.R. RIGGS LONGITUDE: 77.325 degrees
 LENGTH OF CORE: 4.6 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	0	PA	<p>PHOSPHATIC SAND - Light olive brown; very clean, fine phosphatic quartz sand; phosphorite dark brown, grain size increases downward. Occasional silioloid forams.</p> <p>Carbonate fragments increase with abraded corrosion; rock fragments varied color.</p> <p>Phosphorite increases with tan, gray, and dark brown blocks corroded! Becoming granule gravel with slightly Fe stained clay coating on grains. Oysters on surface, rock fragments with sessile benthos attached to surface.</p>
27	121	69	54	13	28	HOLOCENE	HOLOCENE	1	PA	
09	08	53.8	25	13	10	MIOCENE	FPS-I	2	PA	<p>PHOSPHATIC MUDDY SAND - Sharp contact (large indurated fragments of Pungo River in upper zone. Hardground!?) Olive gray phosphatic, very muddy fine quartz sand. Phosphorite dark brown pellets of various grain sizes. Clay is greasy and contains occasional dolomite (?) rhomb sinter carbonate fragments, no forams.</p> <p>Clay very tight.</p> <p>Mottled light tan zone at -1.7m (partially indurated, very muddy, fine angular quartz sand with trace phosphate and glauconite).</p> <p>Below is medium olive brown muddy, subangular, fine to medium quartz with minor phosphate and trace of mica.</p> <p>Phosphorite mostly black but skeletal fragments brown.</p> <p>Sediments slightly mottled.</p> <p>No carbonate of any type.</p> <p>Mica increases slightly downward.</p> <p>Phosphate decrease to 1/3.</p> <p>Lithology uniform to base of core with exception of orange-brown mottles from -3.5 to -2.7m.</p> <p>Similar lithology to surrounding sediment, except grains are Fe stained.</p> <p>Depth of Penetration</p>
08	00	00	20	19	44	MIOCENE	FPS-I	3	PA	
						MIOCENE	FPS-I	4	PA	
						MIOCENE	FPS-I	5	PA	
						MIOCENE	FPS-I	6	PA	
						MIOCENE	FPS-I	7	PA	
						MIOCENE	FPS-I	8	PA	
						MIOCENE	FPS-I	9	PA	
						MIOCENE	FPS-I	10	PA	

ONslow BAY CORE NUMBER: OB114

CRUISE: NSF 0. BAY DATE LOGGED: 9-23-82 LATITUDE: 33.647 degrees
 LENGTH ATTEMPTED: 6.1 m BY: S.R. RIGGS LONGITUDE: 77.697 degrees
 LENGTH OF CORE: 8.2 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	0	P	PHOSPHATIC CALCIC SAND - Very light gray, slightly phosphatic (1 to 2%), quartz (30%), calcarenite sand. Calc white, fine and very angular sand grains; quartz very fine to fine angular sand; phosphatic brown-orange and minor black. 2% orange colored shell fragments, 5% gray stained fragments. Forams, shell fragments and other carbonate grains contain recrystallized surfaces, poorly cemented into small clumps. Becoming coarse calcarenite sand with increasing coarse shell fragments (10% orange and 10% gray-gradational) few fine quartz granules
						HOLOCENE	HOLOCENE	1	P	gradational granular shell gravel (50%) with east of the shells abraded and corroded, Fe-stained and dark gray stained, minor modern shells. 40% carbonate sand grains, trace dark brown phosphatic. 10% quartz fine sand. Becoming whole shells (olives, sand dollars, pectens, abraded bivalves, etc) and increasing to thin cemented (O3) surface at -1.75m
						PLEISTOCENE	PLEISTOCENE	2	P	SHELL PHOSPHATIC LIMESTONE - Dark gray indurated banded carbonate surface (several cm thick); shell fragments all gray. Trace of black phosphatic with an occasional brown grain. Red to light gray fine to coarse calcarenite which is poorly cemented into irregular pebble-sized aggregates with a few fossil molds, approximately 20% light gray barnacle fragments, gray large pecten shells increase downward, almost no quartz grains; no phosphatic. Indurated aggregates increasing in size to 1 to 3 inches and in concentration to approximately 60 to 70% of the core.
						PLEISTOCENE	PLEISTOCENE	3	P	Numbers of indurated zones are increasing downward with an increasing soidal character of certain species of bivalves. Limestone is composed largely of highly abraded fragments of barnacle, sea urchin, etc of shell material, many large gray pecten. Trace of black phosphatic grains which range from fine to very coarse sand.
						PLEISTOCENE	PLEISTOCENE	4	P	Coarse sand to granule black glossy well-rounded phosphatic. 3 chips of dark gray tightly cemented phosphatic quartz sand-looks like a very thin handground surface, phosphatized surface, hard-rock borings, disseminated pyrite. Sea-indurated very light gray calcarenite sand with few fossil solids (leaves as -3.8 to -5 m); 1% black phosphatic sand and granules.
						PLEISTOCENE	PLEISTOCENE	5	P	PHOSPHATIC CALCIC SAND - Becoming pale yellow brown phosphatic (10%) in a fine crystalline calcite matrix and calcarenite-grades vertically downward. Phosphatic is dominantly light brown fine sand grains with abraded honey colored translucent bone and/or shell fragments; occasional granule of black phosphatic in upper 10 cm -maybe related to burrowing?
						PLEISTOCENE	PLEISTOCENE	6	P	Light olive gray quartz (20%) clay (20%) foraminiferal (35%) phosphatic (25%), phosphatic fine to very fine dark brown intracrystals and pellets (see and minor shell) and bone fragments, clay is an olive drab, greasy and looks like it is composed of very fine dolomite (?) rhombs.
7.1		34.4	15.4	2.8	1.3	MIOCENE	FPS-1	6	P	Phosphatic decreasing to 20% at -5.8m and becoming black in color. Forams decrease to 25% and clay increases to 35% and consisting of very fine dolomite (?) rhombs.
9.5	24.3	22.4	2.6	1.1	2.6	MIOCENE	FPS-1	7	P	Forams and phosphatic becoming quite suttles at -6.1m to -6.6m. local suttles will have 5 to 10% phosphatic or 30 to 40% phosphatic.
11.9	0.0	0.0	1.2	1.1	0.2	MIOCENE	FPS-1	8	P	Sediment becomes uniform below -6.6m with an increase in phosphatic 25% very dark brown grains. Becomes olive gray as clay increases to 40% with an apparent loss of dolomite (?) Phosphatic increasing 30% dark brown fine sand and 35% phosphatic.
						MIOCENE	FPS-1	9	P	Highly banded handground fragment of dense, well indurated quartz sandy (3 to 5%) soidal calcarenite-looks like the top of a cycle-eroded from adjacent high handground--maybe what this hole bottomed out at -8.3m.
						MIOCENE	FPS-1	10	P	Sediments underneath fragments are as -7 to -7.5m. Yellowish gray, very quartz sandy (40%), finely crystalline calcarenite (almost same as handground rock at -7.7m). Sediment is highly suttled with some drag structure along the side. Only phosphatic (10%) -+1 occur in suttles of darker olive gray clayey sediment as above.

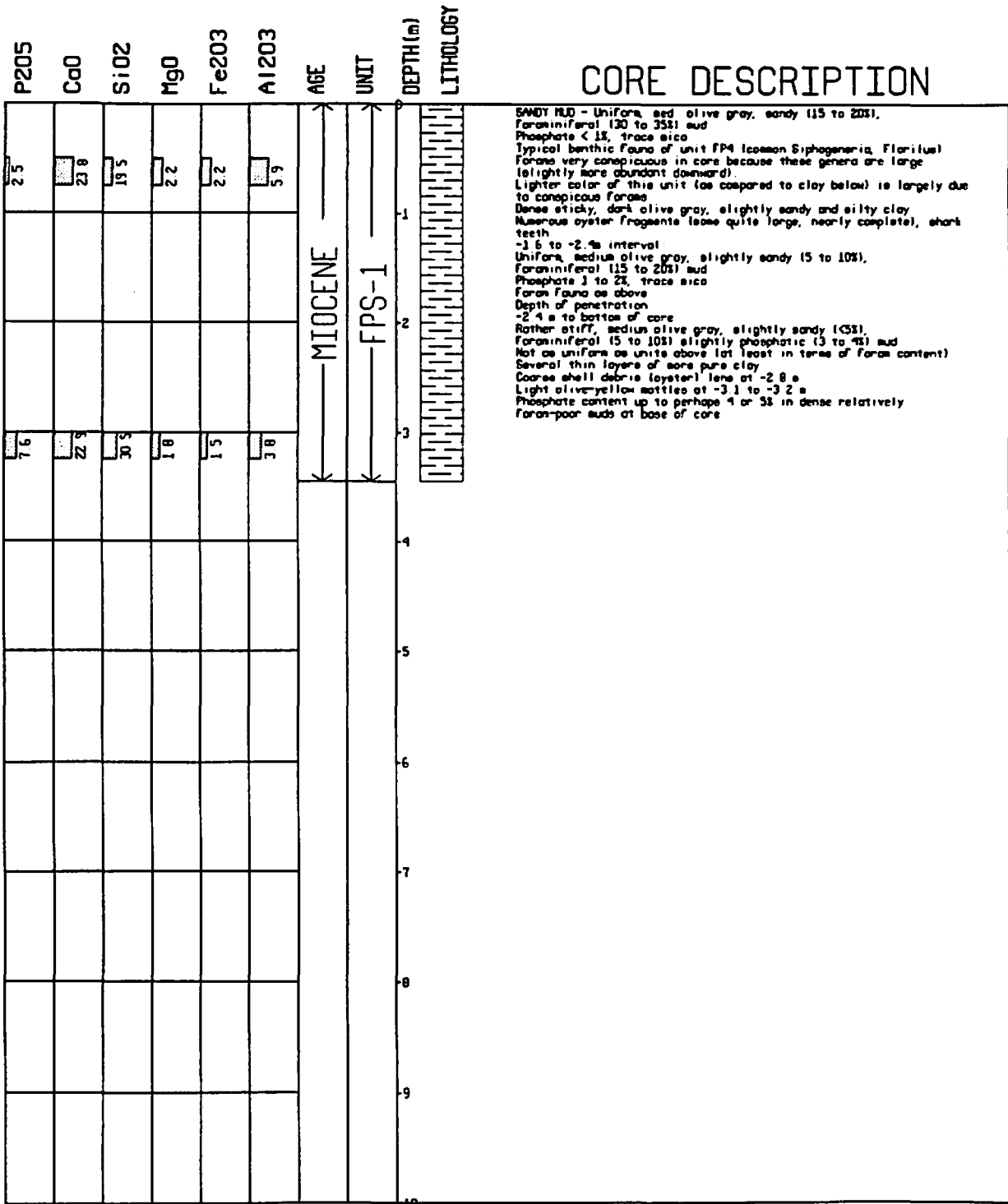
ONslow BAY CORE NUMBER: OB115

CRUISE: NSF 0. BAY DATE LOGGED: 3-31-83 LATITUDE: 33.710 degrees
 LENGTH ATTEMPTED: 7.2 m BY: D. ELLINGTON LONGITUDE: 77.658 degrees
 LENGTH OF CORE: 9.03 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH (m)	LITHOLOGY	CORE DESCRIPTION
						HOLOCENE	HOLOCENE	0	[Lithology symbols]	<p>MUDDY PHOSPHATIC CALCIC QUARTZ SAND - Very light gray, slightly suddy (11m to 21), phosphatic (6 to 7%), quartz (10 to 12%), carbonate sand. Phosphorite very glossy, orange to black (locally), pellets with some intralost. Quartz-increase in size downward. Fine sand to coarse grain sand, subangular-medium with some being highly pitted. Carbonate-medium to highly recrystallized echinoids, bivalves, bryozoans, and forams. Carbonate fragments becoming coarser downward. Some iron staining present on fossils. Light gray, slightly suddy slightly fossiliferous phosphatic quartz sand. Phosphorite (2 to 5%) brown to black pellets. Sharp contact.</p>
						HOLOCENE	HOLOCENE	1	[Lithology symbols]	
						HOLOCENE	HOLOCENE	2	[Lithology symbols]	
						HOLOCENE	HOLOCENE	3	[Lithology symbols]	<p>FOSSILIFEROUS PHOSPHATIC CALCIC SAND - Phosphorite becomes distinctly dark brown to black. Indurated to sea-indurated, white to buff, fossil hash with phosphatic (5 to 8%), carbonate sand or infillings. Fossils--dominantly mollusks, bryozoans, barnacles, worm tubes, and forams. Fossils are moderately to highly recrystallized, solids and casts common. Phosphate-coated pellets--very fine to medium sand size, brown to dark brown to black, occasional pebble. Barnacles become the dominant fossil. Induration becoming more complete with still approximately 20 to 25% sand. Overall size of carbonate fragments decreasing down core. Dominantly sea-indurated, phosphatic (10 to 12%) quartz (10 to 12%), barnacle hash with zones up to 75% phosphate in "mottles". Becoming more indurated down core. Phosphate increasing down core. Quartz increasing down core. Phosphate becoming blacker. Barnacle hash is turning to light gray in color with increasing carbonate cement and decreasing recognizable fossils fragments, giving way to nondescript medium to coarse carbonate particles. Gradational.</p>
						HOLOCENE	HOLOCENE	4	[Lithology symbols]	
						HOLOCENE	HOLOCENE	5	[Lithology symbols]	
						HOLOCENE	HOLOCENE	6	[Lithology symbols]	<p>MUDDY PHOSPHATIC SAND - Grayish olive, quartz (1%), suddy (10-15%), foraminiferal (15 to 20%), phosphorite (50%), sand. Mud-grassy. Testing. Phosphorite: brown to dark brown pellets (65%), intralost (25%), and skeletal (15%). Phosphate increase downward to a maximum of 50% near bottom contact. Looks like FP1 or FP2 unit. Typical phosphorite mottles present. Trace glauconite. Large shark's tooth and bivalve fragments (oysters?) on contact. Sharp contact.</p>
						HOLOCENE	HOLOCENE	7	[Lithology symbols]	
						HOLOCENE	HOLOCENE	8	[Lithology symbols]	
						HOLOCENE	HOLOCENE	9	[Lithology symbols]	<p>MUDDY SAND - Grayish green, calcareous (10 to 15%), suddy, fine grained quartz sand to quartz silt. Quartz is very fine grained angular to subrounded, well sorted. Carbonate dominantly undetermined carbonate grains, echinoid fragments and forams.</p>
						HOLOCENE	HOLOCENE	10	[Lithology symbols]	

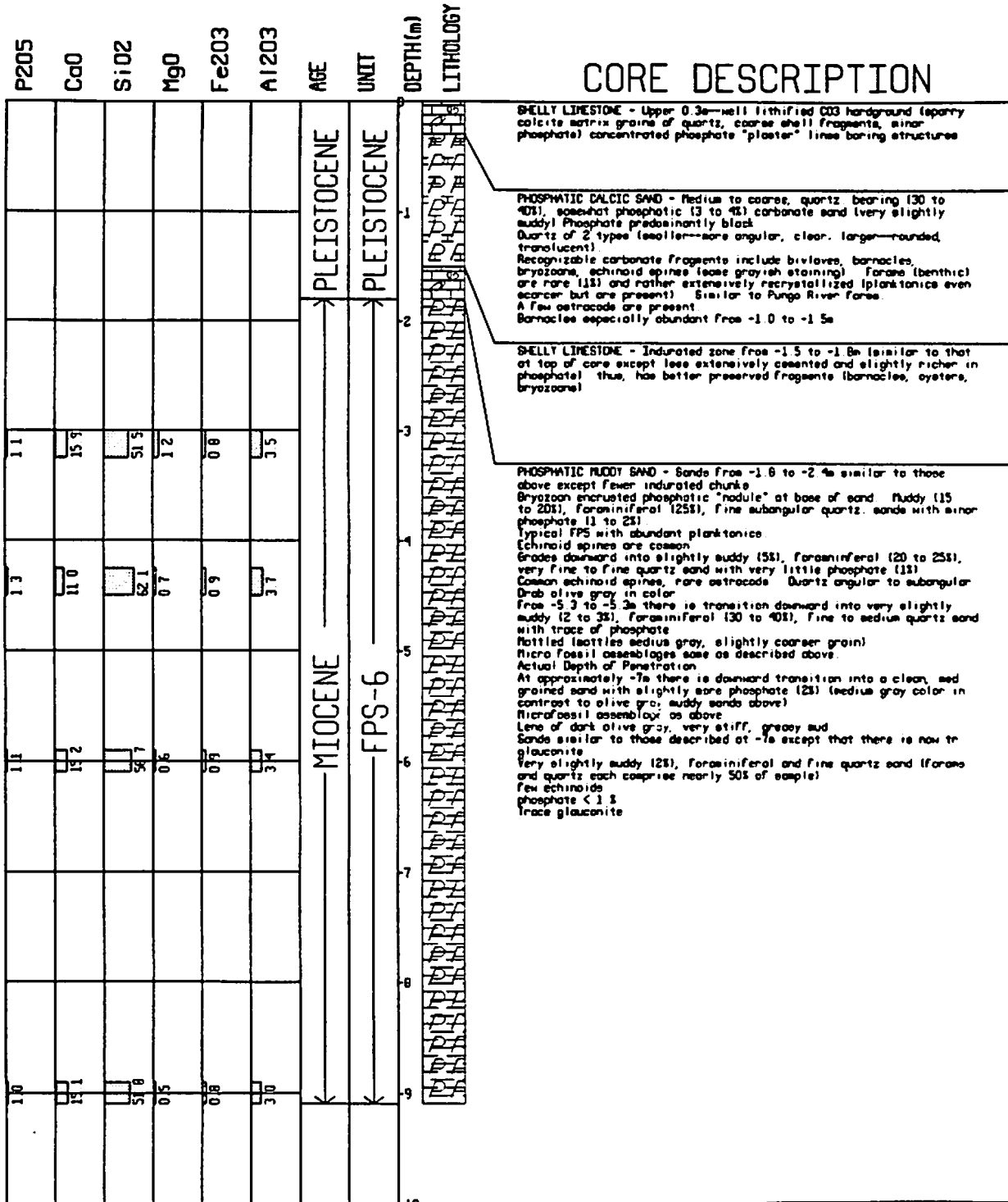
ON SLOW BAY CORE NUMBER: OB116

CRUISE: NSF 0. BAY DATE LOGGED: 4-2-83 LATITUDE: 33.768 degrees
 LENGTH ATTEMPTED: 2.4 m BY: S. SNYDER LONGITUDE: 77.590 degrees
 LENGTH OF CORE: 3.45 m



ON SLOW BAY CORE NUMBER: OB118

CRUISE: NSF 0. BAY DATE LOGGED: 4-2-83 LATITUDE: 33.868 degrees
 LENGTH ATTEMPTED: 6.9 m BY: S. SNYDER LONGITUDE: 77.467 degrees
 LENGTH OF CORE: 9.1 m



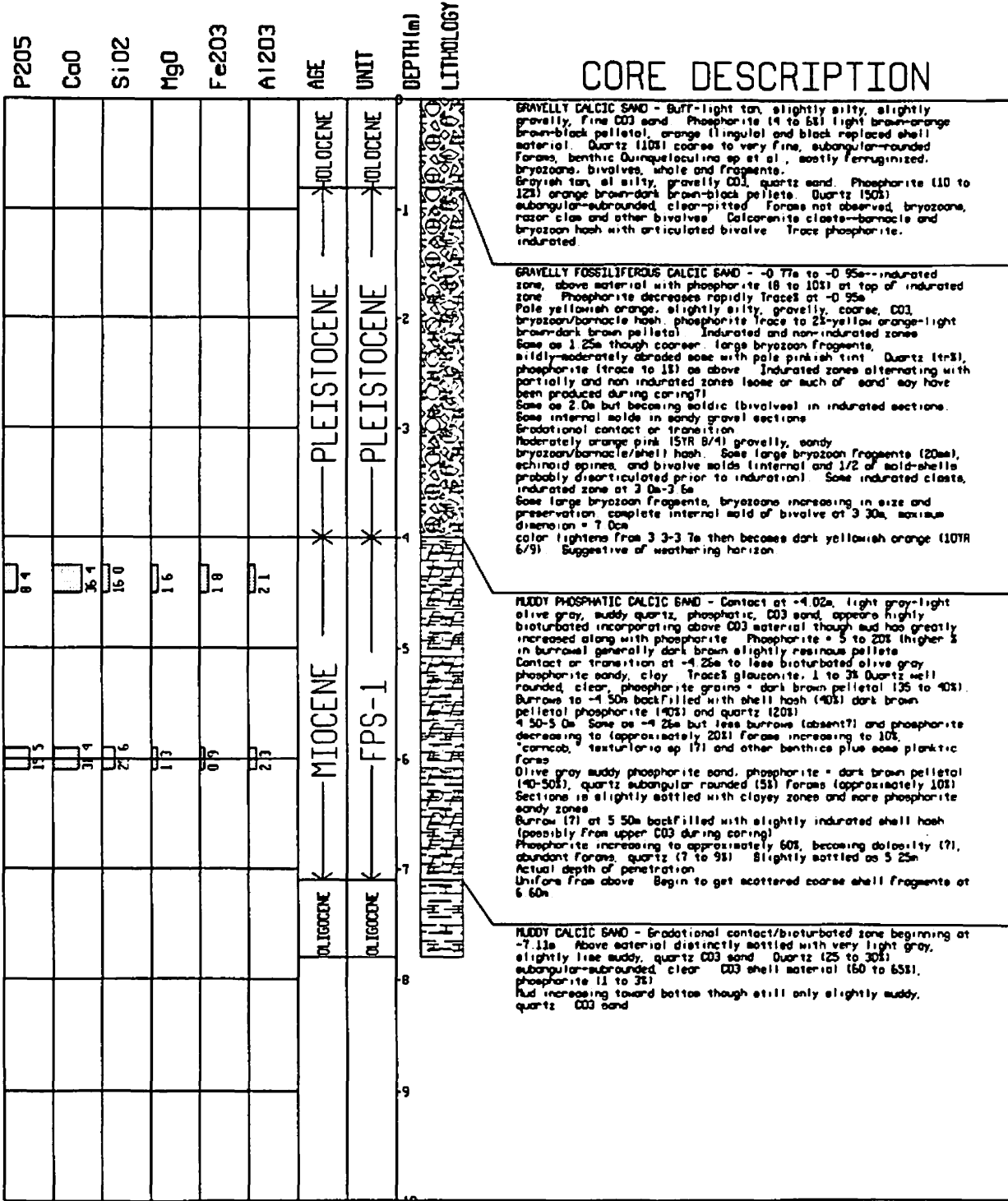
ON SLOW BAY CORE NUMBER: OB119

CRUISE: NSF 0. BAY DATE LOGGED: 5-4-83 LATITUDE: 33.844 degrees
 LENGTH ATTEMPTED: 2.13 m BY: L. STEWART LONGITUDE: 77.551 degrees
 LENGTH OF CORE: 3.66 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						MIOCENE	FPS-1	0	0	SHELLY LIMESTONE - Greyish orange, bryozoa, barnacle, echinoid packstone. Top has been bored and partially iron and phosphate stained. Sharp contact
1.9	16.2	42.1	1.9	2.0	3.5			1	FOSSILIFEROUS DOLOMITIC QUARTZ MUD - Yellowish gray, fossiliferous (55), dolomitic (20%), quartz (30%), very consolidated mud. Quartz is very fine, sub-rounded sand. Dolomite is silt-sized rhombs. Fossils poorly preserved forams and echinoid spines. Also contains trace to 1% heavy and 1 to 2% glauconite. Sharp contact	
								2	Moderate olive brown, phosphatic (2%), foraminiferal (4%), quartz sandy (30%), greasy mud. Quartz is fine and subangular. Forams well preserved (benthic > planktic). Phosphate dominantly dark brown pellets with lesser amount of skeletal. Trace mica and echinoid. Forams increasing slightly downcore (to about 5%). Siphonogenerina becoming common. Forams are commonly filled with pyrite and zeolites (?)	
								3	Fine -1.1a to -1.73a settling with similar lithology of darker color (olive gray). Phosphate and forams gradually increase downcore to 5% and 20%, respectively. Quartz sand decreases proportionately. Few laminae/siltites? with higher concentrations of forams in the last ~0.5m of core. Depth of penetration = 2.13a	
								4		
								5		
								6		
								7		
								8		
								9		
								10		

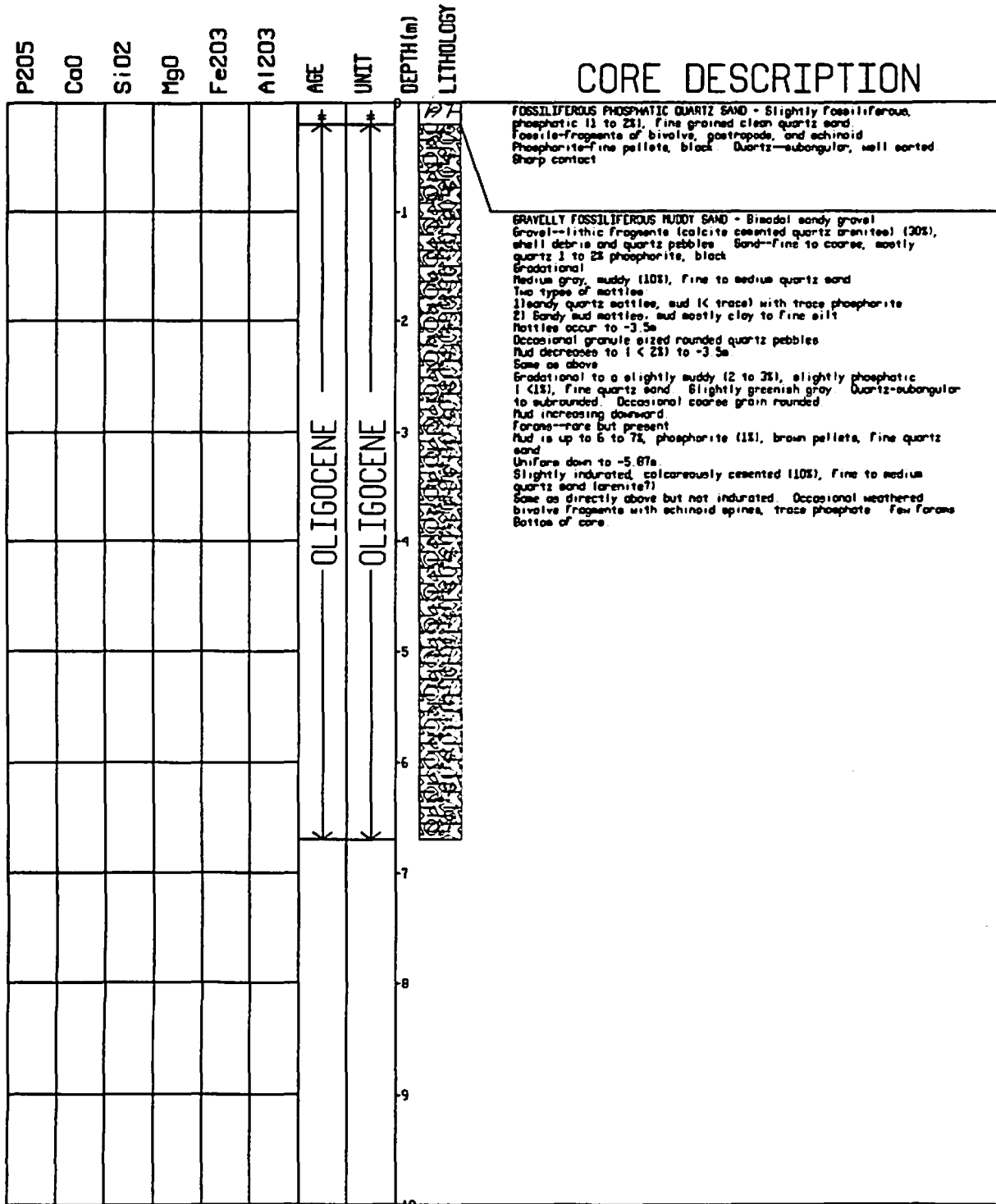
ON SLOW BAY CORE NUMBER: OB120

CRUISE: NSF 0. BAY DATE LOGGED: 5-4-83 LATITUDE: 33.796 degrees
 LENGTH ATTEMPTED: 6.6 m BY: P. MALLETT LONGITUDE: 77.588 degrees
 LENGTH OF CORE: 7.8 m



ONslow BAY CORE NUMBER: OB121

CRUISE: NSF 0. BAY DATE LOGGED: 3-26-83 LATITUDE: 33.968 degrees
 LENGTH ATTEMPTED: 6.2 m BY: D. ELLINGTON LONGITUDE: 77.528 degrees
 LENGTH OF CORE: 6.7 m



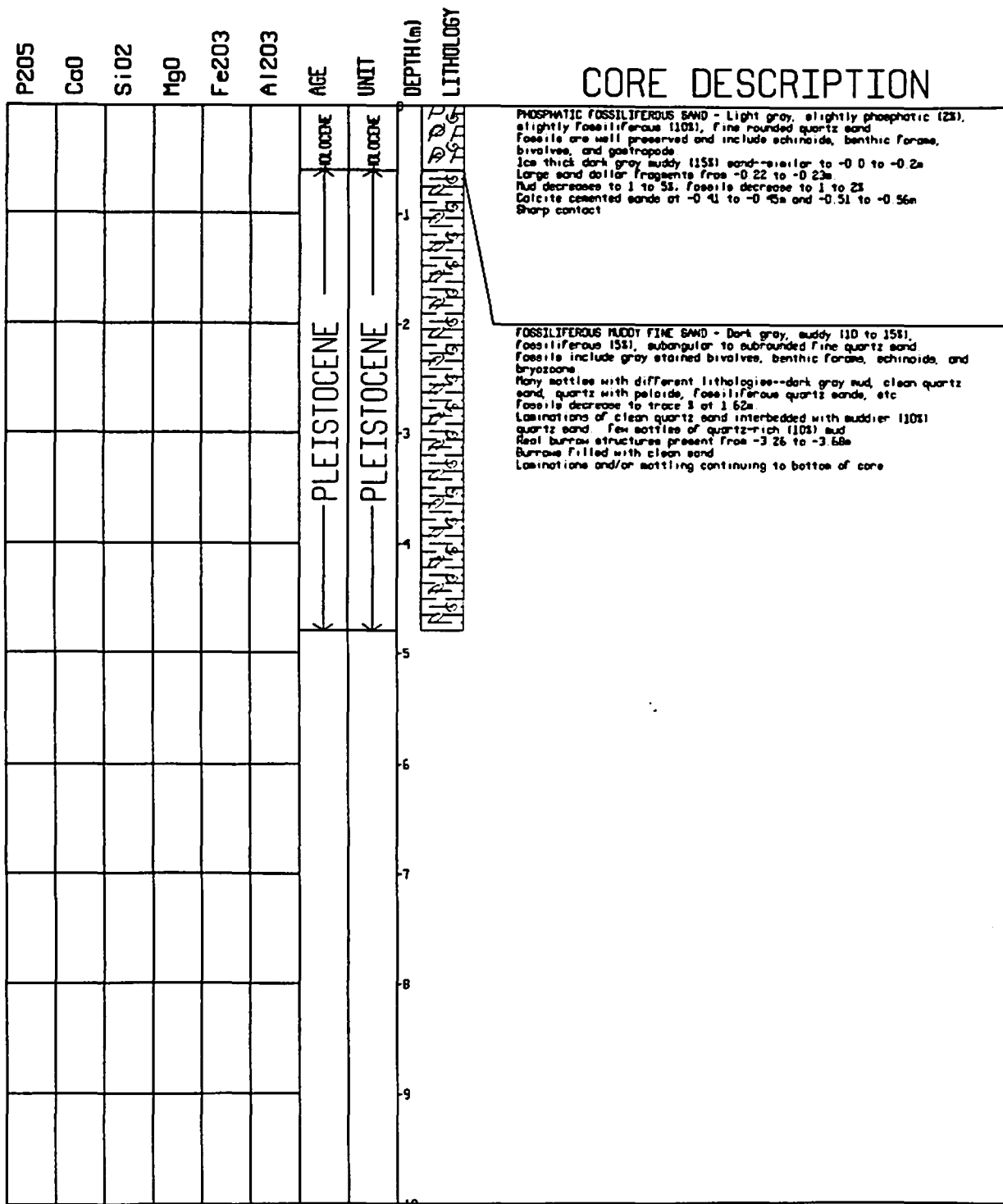
ON SLOW BAY CORE NUMBER: OB123

CRUISE: NSF 0. BAY DATE LOGGED: 4-2-83 LATITUDE: 34.090 degrees
 LENGTH ATTEMPTED: 4.0 m BY: P. MALLETTE LONGITUDE: 77.369 degrees
 LENGTH OF CORE: 6.62 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION	
						MIOCENE	FPS-2	0	|	<p>MUDDY QUARTZ SAND - Dark, greenish gray, very muddy, cohesive, fine quartz sand, glauconitic 2 to 3%. Quartz is angular—very angular. Phosphorite medium brown pellets. Somewhat eucroic lentire sample. Becomes indurated at -0.10m, silicified, with distinct uncemented sandy pods up to 1 cm diameter within nodules. Clean fine quartz sandy wisps and pods appear as light bottles. Nodules 2 to 4 cm silicified, with clean, fine, uncemented quartz sandy pods within.</p> <p>Mud increasing: muddy, fine, glauconitic (2 to 3%), eucroic quartz sand. Occasional abraded shell fragments.</p> <p>Very muddy, eucroic (dolomitic?), fine quartz sand. Large forams fragment (Peneroplia, or some such name). Sandy pods still common with up to 4% intraclastic (microal) phosphorite, dark-medium brown. Silicified nodules common.</p> <p>Sandy pods and wisps more pronounced and increased size, also pin bottling.</p> <p>Grayish olive very muddy, very fine quartz sand. Large silicified nodules with clean sandy pods and wisps. Glauconite 2 to 3%—few shell fragments. Trace to 1%. Somewhat eucroic.</p> <p>Some grayish olive, very muddy, very fine quartz sandy, glauconitic (4%) silty clay.</p> <p>Trace muscovite, slightly fossiliferous, Lingula fragments (?)</p> <p>Silicified nodules common (as above) with clean sandy pods.</p> <p>Characteristic change in silicified nodules become dark gray, dense, silica cemented, conchoidally fracturing, glauconitic 1 to 2%, very fine-silt size quartz. Some (fewer) quartz sandy pods. Nodules floating in muddy quartz very fine sandy-silty clay.</p> <p>Nodules up to diameter of core, some as -2 cm.</p> <p>Yellowish gray, clean-slightly silty, glauconitic (3 to 4%), very fine, angular quartz sand as burrow fillings within some quartz silty clay.</p> <p>Depth of penetration</p> <p>Grayish olive, sticky tight clay, glauconite (Trace to 1%). Sandy pods have decreased considerably from above. 2 to 3 pods per 10cm vertical length.</p> <p>Large silicified nodules still common, spaced approx every 25 cm.</p> <p>Some grayish olive, sticky, tight clay. Trace glauconite, sandy pods absent.</p> <p>Silicified nodules still common.</p> <p>Grayish olive, silty clay. Glauconite (3 to 4%). Muscovite trace to 1%. Amber grains (?) medium-fine sand size, angular (trace).</p> <p>Some as above, but with occasional medium sand sized Fe stained quartz grains. Silicified nodules as above.</p>	
										-1	|
										-2	|
										-3	|
										-4	|
										-5	|
										-6	|
										-7	|
										-8	|
										-9	|
								-10	|		

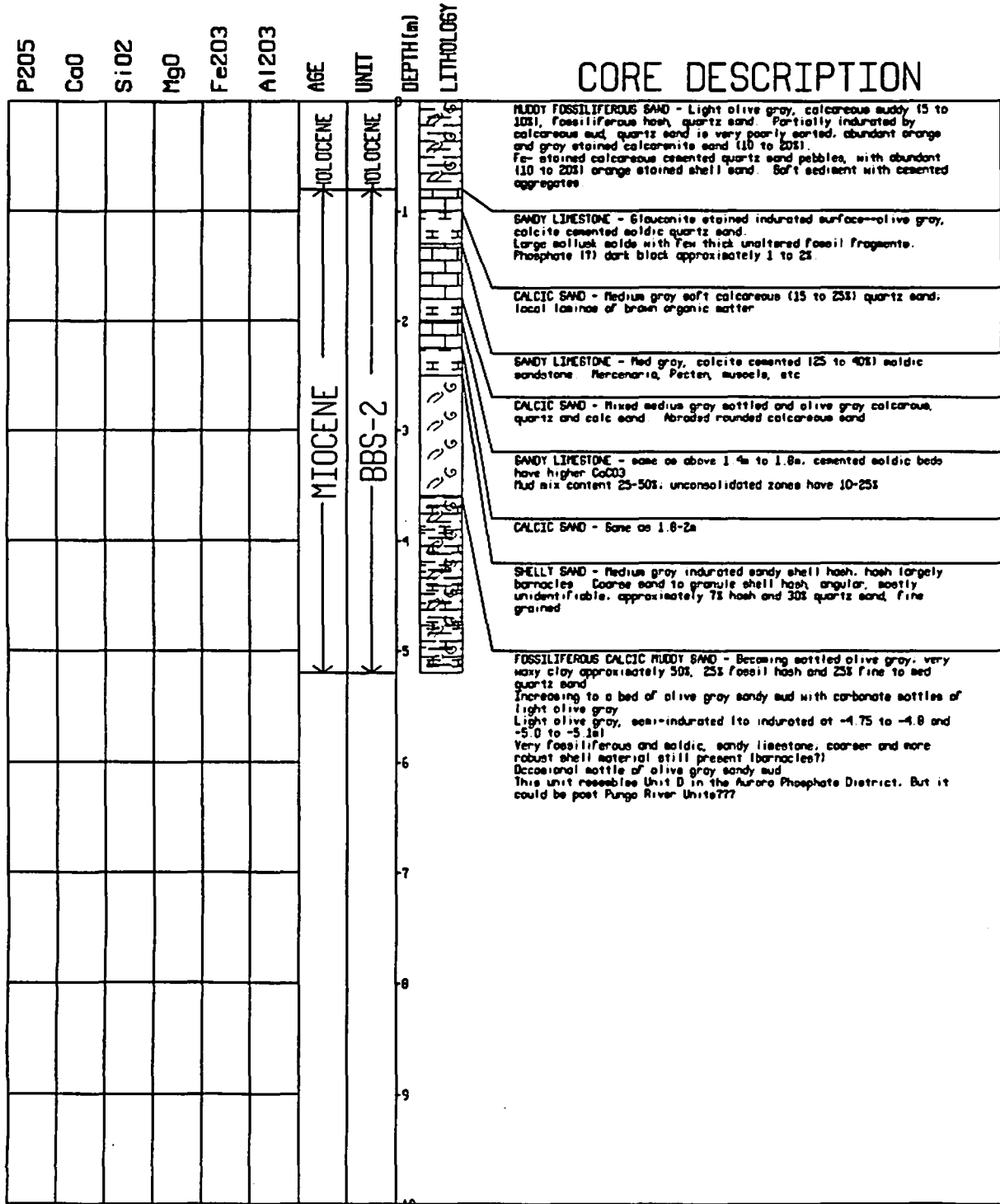
ONslow BAY CORE NUMBER: OB124

CRUISE: NSF 0. BAY DATE LOGGED: 4-2-83 LATITUDE: 34.339 degrees
 LENGTH ATTEMPTED: 6.3 m BY: L. STEWART LONGITUDE: 77.151 degrees
 LENGTH OF CORE: 4.8 m



ONslow BAY CORE NUMBER: OB125

CRUISE: NSF 0. BAY DATE LOGGED: 8-11-82 LATITUDE: 34.360 degrees
 LENGTH ATTEMPTED: 4.4 m BY: S.R. RIGGS LONGITUDE: 76.970 degrees
 LENGTH OF CORE: 5.2 m



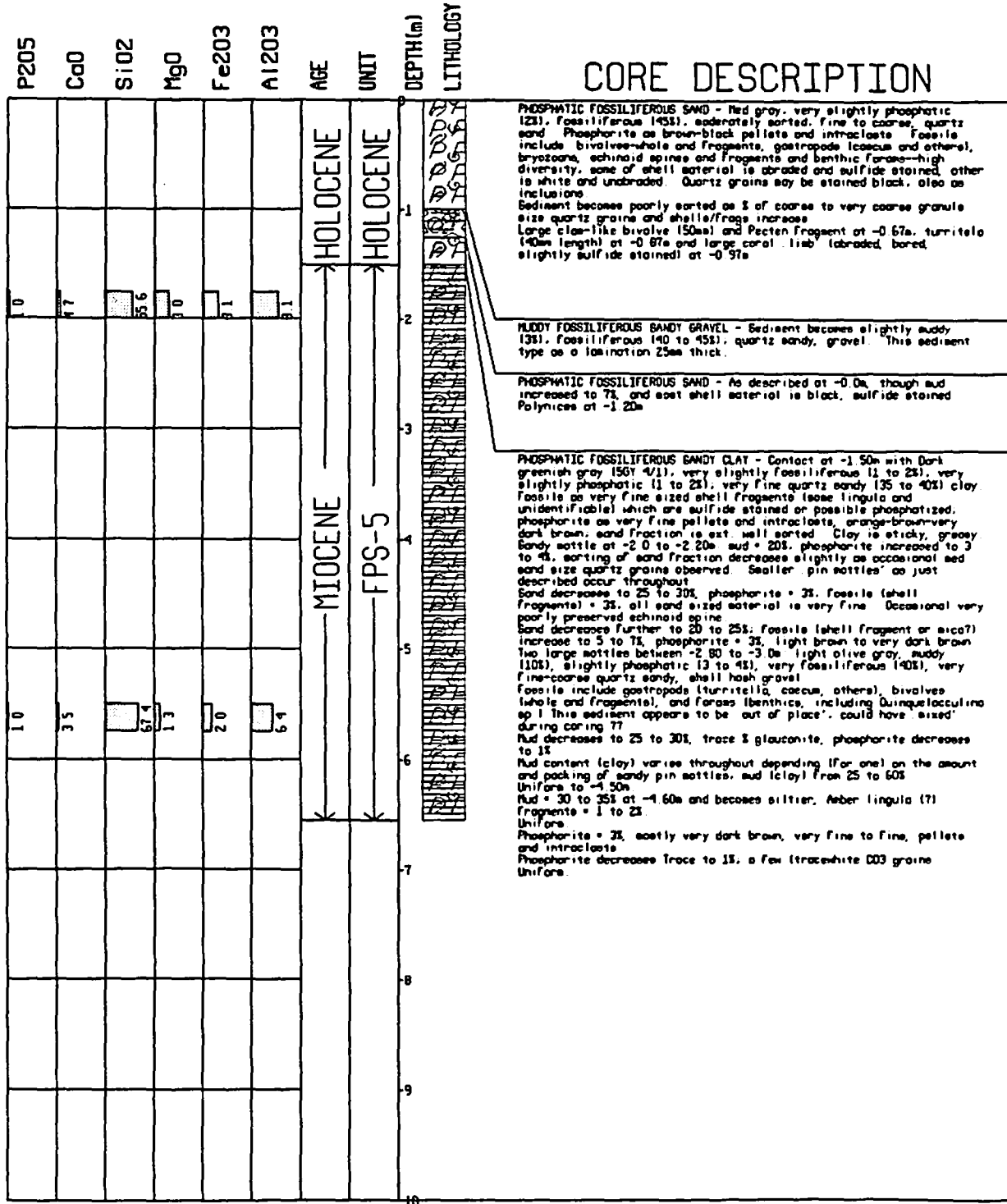
ON SLOW BAY CORE NUMBER: OB126

CRUISE: NSF 0. BAY DATE LOGGED: 8-1-83 LATITUDE: 33.974 degrees
 LENGTH ATTEMPTED: 6 m BY: P. MALLETTE LONGITUDE: 77.499 degrees
 LENGTH OF CORE: 8.41 m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY
						OLIGOCENE	OLIGOCENE	0	<p>MUDY FOSSILIFEROUS FINE QUARTZ SAND - Pale olive (10T 6/2), muddy (15S), fossiliferous (7S); well sorted, subangular-subround, very fine quartz sand. Trace to 0% phosphorite. Trace to 1% heavy fossils include very poorly-poorly preserved forams (mostly benthic) and echinoid spines.</p> <p>Sottle at 47-54 m = Light olive gray, muddy (7 to 10S), fossiliferous (5 to 7S); phosphatic (5 to 7S); poorly sorted; medium to very fine quartz sand.</p> <p>Sottle at -0.91 to -1.00 m = grayish olive (10T 4.2); fossiliferous (7S); phosphatic (10S); muddy (30 to 35S); very poorly sorted (somewhat bimodal), coarse-very coarse and fine to very fine quartz sand. (Looks at little like PPF 1, sottle only surrounding material is uniform from 0 to 1).</p> <p>Sottle at -1.05 to -1.14 m (same as sottle at -0.47 to -0.54m) fossil material-including forams-decreasing to 15% by -1.25 m, then decreasing sharply to 5 to 7% by -1.40m.</p> <p>Fossils decreasing to 3 to 5% (mostly forams) by -1.75m, scattered grains of quartz in medium-granule size, pyrite grain (2) noted. Forams preservation is very poor to good depending on degree of abrasion, not such (any?) recrystallization noted. Occasional ostracod, and lingula fragment.</p> <p>Fossils (incl. forams) increasing -10 to 12% Occasional corals, phosphorite trace 2, heavier trace to 1% glauconite trace 3, forams. Planktic-Benthic = 1:2-2:1</p> <p>Mud increasing to approximately 20%. * of grains larger than very fine sand size also increasing, sediment becomes mud well sorted. Most larger grains are silty-clear though a few grains of blue quartz are present, all larger grains are well-very well rounded.</p> <p>Planktic-Benthic (forams) = 4:1</p> <p>A few large lup to 13es, robust shell fragments noted at -3.40 to -3.50m.</p> <p>Sorting decreasing further and no longer bimodal (very fine and very coarse) as some grains are in fine, medium, and coarse range - moderately sorted. Amber and light brown shell fragments increase. I may be some lingula though others present though still < 1%. Dark calc and other uniserial benthic forams slightly increased. Phosphate intracrystals increase to < 1%.</p> <p>Zone from -3.70 to -4.0m contains large (20 to 40es) pebbles of fine quartz sandy (4S), limestone, limestone (calc-matrix) varies from cream (on fresh surface) to dark gray (as outer rim). Outer rim is occasionally glauconitic.</p> <p>Fairly common grains of this rock material observed in washed samples, coarse sand size. Sediment is uniform from above except forams have decreased to 3-5% and Planktic Benthic approximately 1:1</p> <p>Large shells and fragments noted at -4.0 to -4.20m. Detrital pecten. One ostracod is 5S complete.</p> <p>Fossils, i.e. sand size shell fragments, echinoid spines, forams increasing to 7 to 10% (forams = 5 to 7%).</p> <p>Core becomes distinctly sotted starting at 4.60m. Sottles are above material enclosed in a slightly greenish, red, gray slightly muddy (3-5S), ext. very well sorted, subangular-subrounded, fine quartz sand.</p> <p>Forams = Trace to 1%; phosphorite = Trace to 1%. OOS intracrystals trace 5, heavier traces.</p> <p>At 5.0m sottles and enclosing sediment are approximately equal in volume.</p> <p>Sorting is enhanced in sottles and becomes mud well sorted, forams = 5-7%, preservation is fair to good.</p> <p>Mud decreases to 10% in sottles, otherwise sottles and enclosing sediment is uniform.</p> <p>Mud decreases further in sottles to 5 to 7%, increases in enclosing sediment to approximately 10%. Forams in sottles and enclosing sediment = Trace to 1%. Sottles still distinctly different from enclosing sediment due to color diff and sediment sorting.</p> <p>Sediment in sottle at -6.30m is very poorly sorted, gravel size material = 5% shell fragments and well rounded quartz grains), and = 5 to 7%, glauconite not observed as distinct grains but common as coatings on quartz grains and shell fragments.</p> <p>Sottling as described above is subdued by -6.40m (except small one = -6.72m) though small sandy pin sottles are present.</p> <p>Mud decreases to 5 to 7%, forams present as trace 2, these are fairly robust benthic and preservation is poor w/ recrystallization.</p> <p>Planktic Benthic approximately 0:1</p> <p>Increase in shell fragments (appearance) Robust, medium-granule size, abraded, and may be stained orange. Total = 1%.</p> <p>Fossils (shell fragments and forams) = 3% Forams preservation is poor to good, may or may not be recrystallized. One planktic noted.</p> <p>Fossil material decreasing to trace 1, forams that are present are robust forams and are recrystallized.</p> <p>Mud increase to 10%, fossils increase to 3%.</p> <p>Granule size barnacle fragments.</p> <p>Planktic forams increasing slightly, Planktic Benthic = 1:3-4, still recrystallized.</p>
12	82	65.8	0.7	1.1	3.7			1	
0.5	5.2	63.6	0.6	1.1	3.9			2	
0.7	7.3	67.9	0.5	1.0	3.1			3	
0.4	3.2	68.0	0.7	2.5				4	
0.4	2.5	68.7	0.7	2.7				5	
								6	
								7	
								8	
								9	
								10	

ONSLOW BAY CORE NUMBER: OB128

CRUISE: NSF O. BAY DATE LOGGED: 8-5-83 LATITUDE: 33.997 degrees
 LENGTH ATTEMPTED: 4.56m BY: P. MALLETT LONGITUDE: 77.278 degrees
 LENGTH OF CORE: 6.55



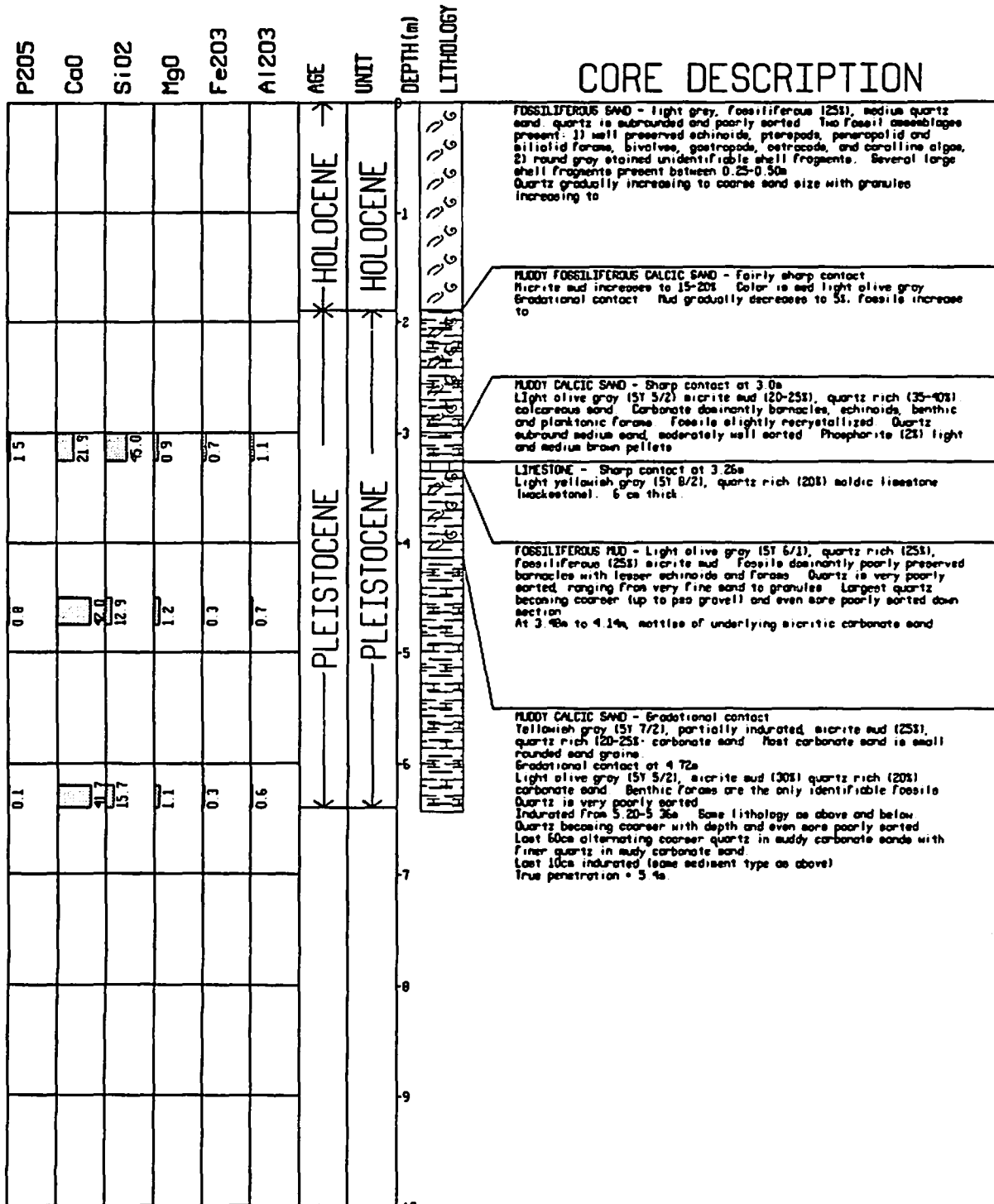
ONslow BAY CORE NUMBER: OB130

CRUISE: NSF O. BAY DATE LOGGED: 7-27-83 LATITUDE: 34.158
 LENGTH ATTEMPTED: 2.25m BY: P. MALLETT LONGITUDE: 77.325
 LENGTH OF CORE: 4.11m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION
						Miocene	FPS-1	0	0	<p>PHOSPHATIC SANDY FOSSILIFEROUS GRAVEL - Light olive gray (5T 6/2), slightly phosphatic (3S); fine-coarse quartz sandy, very poorly sorted, quartz granule and shell fragment gravel. Phosphorite as brown black pellets and intraclasts. Quartz is subang-rounded, ranges from 0.125mm to 4.0mm. Shell fragments up to 30mm are highly abraded and are Fe or sulfide stained or may be fresh unabrased, with natural coloration. By -0.30m, staining is mostly sulfide. Large pebble of moldic, sandy limestone (12mm) noted.</p>
						Miocene	FPS-1	1	1	<p>MUDDY FOSSILIFEROUS PHOSPHATIC SAND - At -0.40m, clasts of FPF 1 noted: Light olive gray (5T 5/2), slightly muddy (1 to 2S), slightly fossiliferous (1 to 2S); slightly phosphatic (2S), well sorted, angular to subrounded, very fine quartz sand. These clasts are floating in the previously described material making an indistinct contact. By -0.60m, material is dominate FPF 1. By -1.50m, mud st: increased to 3 to 5S, Lingula fragments noticed throughout (1S, glauconite trace), forams absent (See material at bottom). Whole core from -1.60m to bottom (FPF 1) is somewhat mottled. Fairly distinct, large nodule (zone?) from -1.53 to -1.63m contains approximately 7% phosphorite as dark brown intraclasts and pellets in fine sand size. Mud increase to 5S at -1.75m. Very slightly indurated zone at -1.95 to -2.0m (does not effervesce) and another larger, tightly bound, indurated zone at -2.10 to -2.18m = HARDGROUND. Sediment is silica cemented and uniform with that above and below the indurated zone. Mud decreasing to 2S by -2.50m, phosphorite = trace, Lingula fragments = trace to 0. Several indurated pebbles noted of same composition as surrounding sediment, pebble size 4 to 12mm, silica cemented, abraded, rounded. Sediment uniform, though the bone fragments may have increased slightly. Trace to 1S qtz is still very fine sand size though a few (1S) of grains are in medium to very coarse size range, these grains are well to very well rounded. Mud increasing to 5 to 7S. Uniform from above. Indurated-partially indurated zone at -1.58 to -1.64m = dolomitic, fine to very fine qtz sand, with 1-3% (?) phosphorite. Above this zone (in section 2, is OB-130-2) phosphorite reaches 5 to 7S, then decreases below the indurated zone to trace to 1S. 1 = slightly indurated. I = indurated. HG = Hardground.</p>
						Miocene	FPS-1	2	2	
						Miocene	FPS-1	3	3	
						Miocene	FPS-1	4	4	
						Miocene	FPS-1	5	5	
						Miocene	FPS-1	6	6	
						Miocene	FPS-1	7	7	
						Miocene	FPS-1	8	8	
						Miocene	FPS-1	9	9	
						Miocene	FPS-1	10	10	

ONslow BAY CORE NUMBER: OB131

CRUISE: NSF O. BAY DATE LOGGED: 7-12-83 LATITUDE: 34.011 degrees
 LENGTH ATTEMPTED: 5.4m BY: P. MALLETT LONGITUDE: 77.026 degrees
 LENGTH OF CORE: 6.44m



ONslow BAY CORE NUMBER: OB132

CRUISE: NSF 0. BAY DATE LOGGED: 7-26-83 LATITUDE: 34.468 degrees
 LENGTH ATTEMPTED: 3.18m BY: P. MALLETTE LONGITUDE: 77.221 degrees
 LENGTH OF CORE: 3.9m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION	
						← PLIOSTOCENE →	← PLIOSTOCENE →	1	|	|	<p>PHOSPHATIC FOSSILIFEROUS SAND - Light olive gray (5Y 6/2), slightly phosphatic (15%), fossiliferous (15%), moderately sorted, subangular-well rounded, medium quartz sand Phosphorite occurs as brown to very dark brown pellets. Fossils include benthic forams, bivalve shell fragments, and worm tubes. Fossils vary from well to poorly preserved (abraded) and are mostly iron stained. Trace to 1% heavies. Trace to 1% calc pellets. Reduction zone (dark) at .14m say or say into be real - color difference may be due to decrease in shell material whose Fe staining gives orangish color</p>
0.4	7.1	56.3	0.6	1.7	4.2	← MIOCENE →	← FPS-1 →	2	|	|	<p>MUDDY SANDY GRAVEL - Gradational contact at -0.30 to -0.50m from overlying surface sands to a med dark gray, calc muddy (15%), fine qtz sandy (45%), fossil gravel "Estuarine-looking" quartz is very fine to coarse, very poorly sorted, and well rounded. Fossils include large eon anella (Polyniceae), lava, sinus and strobilus (?) oysters, scaphopods, pecten and other bivalve shell frags, bryozoans, echinoid plates and spines, benthic and occ planktic forams. Trace 1% phosphorite Light olive gray (5Y 5/2), slightly suddy (5%), forams rich (35%), very well sorted, angular-subrounded, very fine quartz sand clast at -0.73 to -0.75m. Forams are planktic and not well preserved, recrystallized. Clast is surrounded by the calc muddy, sandy gravel described above</p>
0.4	12.9	58.9	0.7	1.9	3.9			3	|	|	<p>MUDDY FOSSILIFEROUS SAND - Contact at -1.0m between med dk gray calc muddy, qtz sandy fossil gravel above and light olive gray slightly suddy (5%), fossiliferous (20 to 25%), very well sorted subangular to subrounded, very fine qtz sand. Appears to be same as clast at -0.75m though forams have decreased to 10% and echinoid spines increased to 1 to 2%, phosphorite Trace to 0% Forams increase to 15% at -1.30m, preservation getting better but still some recrystallization. Tr 1% glauconite, Tr 1% heavies Forams decrease to approximately 7% at -1.50m, preservation is very poor to poor, and decreased to 2 to 3% Clast of "pods" at -1.50m and -1.70m of medium gray, slightly suddy (15%), fossiliferous (20%), 003 pellets (20%), very well sorted, angular, subrounded, very fine quartz sand. Fossils here as bivalve shell fragments, abraded and black-stained, forams Trace to 0%, phosphorite = Trace to 0% (int) Length Attempted</p>
0.4	18.4	51.9	0.5	1.1	2.5			4	|	|	<p>GLAUCONITIC MUDDY FOSSILIFEROUS SAND - Contact at -1.90m with light olive gray, slightly suddy, fossiliferous, very fine quartz sand above and medium gray glauconitic (2 to 3%) calc muddy (15%), 003 pellets (20%), fossiliferous (20%), medium to very fine quartz sand Glauconite occurs as individual grains and as coatings or splashes on 003 pellets. 003 pellets are gray-white, subpherical, med to fine sand size. Fossils include bivalves, whole and both large and small abraded white-black fragments, bryozoans, gastropods, scaphopod frags. Within this unit are interbeds at -2.13 to -2.20m and -2.30 to -2.35m of light olive gray, slightly suddy, fossiliferous, very well sorted and very fine quartz sand described above</p>
9.3	10.0	66.3	1.3	3.0				5	|	|	<p>MUDDY FOSSILIFEROUS SAND Contact at -2.45m. Light olive gray (5Y 5/2), very slightly suddy (1%), fossiliferous (15%), well sorted, subangular, very fine to fine quartz sand. Fossils include echinoid spines, shell fragments, and planktic forams (10 to 12%). Forams are poorly preserved and recrystallized. Phosphorite = Traces as replaced bone and shell material. Some aggregates present up to 3mm - calcite cemented. Uniform (to -3.0m) though becoming very well sorted as sand is approximately 80 to 90% in very fine size range. Forams 1% may have decreased slightly. 3.50m P. Forams decrease to 3 to 5% though preservation is med to good, echinoid spines increase to 2 to 4%. Heavies increase to 1% Phosphorite = traces. Basically uniform from contact at 2.45 to 3.90m at -3.90m P. forams = Trace to 1%, echinoid spines = 1-1%, unident shell fragments, white highly abraded = 3%, heavies 1-2%</p>
								6	|	|	
								7	|	|	
								8	|	|	
								9	|	|	
								10	|	|	

ONslow BAY CORE NUMBER: OB135

CRUISE: NSF O. BAY DATE LOGGED: 7-22-83 LATITUDE: 34.425 degrees
 LENGTH ATTEMPTED: 5.13m BY: P. MALLETTE LONGITUDE: 77.19 degrees
 LENGTH OF CORE: 6.77m

P205	CaO	SiO2	MgO	Fe2O3	Al2O3	AGE	UNIT	DEPTH(m)	LITHOLOGY	CORE DESCRIPTION	
						↑	↑	0	0	<p>FOSSILIFEROUS PEBBLY QUARTZ SAND - Gray, pebbly, quartz sand, somewhat fossiliferous (5-7%) bivalve shell fragments, echinoid spines, benthic forams (Quinqueloculina sp and others), bryozoans. Sand fraction is dominantly medium texture though poorly sorted. Overall quartz grains are rounded to angular, becoming more angular as size decreases. Black, intracrystalline phosphate pebbles present (8%), also large phosphatized bone fragments.</p>	
								1	1	<p>GRAVELLY QUARTZ SAND - Olive gray (SY 4/1), slightly bimodal fine qtz sand (average grains approximately 100). Slightly shell hash gravelly (3 to 5%). Quartz is subangular, and aphanitic, clear and pitted. Trace phosphorite as replaced skeletal fragments and as fine pellets and intracrystals.</p>	
								2	2		
								3	3	<p>MUDDY PHOSPHATIC SAND - Consists of pods up to 5 sq cm. and clasts 1 up to 7cm of relatively sandier and muddier sediment. Phosphate in sandier portions may be 5% and dominantly pelletal (very dark brown). Muddier sections (7-10%) are much more fossiliferous (20%) more tubes, phosphatized shell fragments, forams (alveolids dominant) Trace s. bryozoans and gastropods. Qtz is fine to very fine, clear, rounded. Trace phosphorite as intracrystals. Pod of clean, fine quartz sand 1.10m, phosphorite = 3% very dark brown pellets and intracrystals</p>	
						↑	↑	4	4	MIOCENE	FPS-1
								5	5	<p>MUDDY FOSSILIFEROUS PHOSPHATIC QUARTZ SAND - Olive gray, slightly suddy (3 to 5%), fossiliferous (20%), slightly phosphatic (7% 1%), very well sorted, very fine qtz sand. Fossils include echinoid spines and planktic forams. Phosphate (7%) as black, angular, very fine grains, quartz is clear, subang-subround. Glauconite = Trace s. Mud increasing to 10-12% at top of section 2 then back to 3-5% by 1.7m. Forams (planktic) = 12% Section is zoned, planktic forams 1.5 to 3.0m. Light olive gray (SY 5/2), slightly suddy (3 to 5%), silty (10 to 15%), well sorted subang qtz sand. Planktic forams increasing 20% Planktic = 15%, phosphorite trace to 1%, unident shell frags increasing though only 1-2% Overall section takes on a slightly settled appearance where some portions contain a slightly higher % mud (increase of 1 to 3%) forams decreased to 5%, mud increased to 10% Some forams (planktic) decrease to 1 to 2%, echinoid spines present, mud 3 to 5%, phosphorite = trace to 1% as brown pellets (very fine sand size) or replaced shell or bone material. Mud = 7 to 8%, forams trace to 1%, phosphorite trace Length Attempted Same as above Mud 7 to 8%, forams trace to 1%, phosphorite trace to 1%; Lingula fragments present (Trace s) same Mud increased to 20%, otherwise, same as above</p>	
								6	6		
								7	7		
								8	8		
								9	9		
								10	10		

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